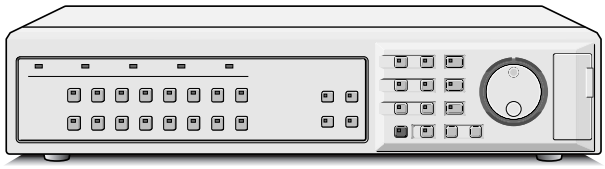
SANYO

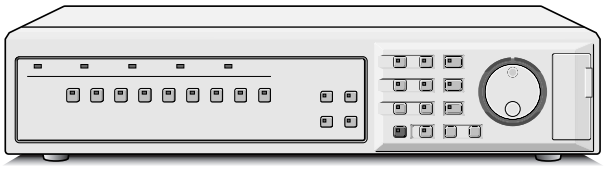
## Digital Video Recorder with Multiplexer Function

# DSR-3016P
# DSR-3009P

| | | |
|---|---|---|
| **Instruction Manual** | **English** | **GB** |
| **Bedienungsanleitung** | **Deutsch** | **D** |
| **Manuel d'instructions** | **Français** | **F** |
| **Manual de Instrucciones** | **Español** | **E** |
| **Manuale di Istruzioni** | **Italiano** | **I** |



**DSR-3016P**



**DSR-3009P**

### About this manual
- Before installing and using this unit, please read this manual carefully. Be sure to keep it handy for later reference.
- This manual gives basic connections and operating instructions for 2 models.

### Über diese Anleitung
- Lesen Sie bitte diese Bedienungsanleitung vor der Installation und der Verwendung des Gerätes sorgfältig durch. Bewahren Sie die Anleitung zum späteren Nachschlagen auf.
- In dieser Anleitung werden die Anschlüsse und die Bedienungsanleitungen für 2 Modelle beschrieben.

### À propos de ce manuel
- Avant d'installer et d'utiliser cet appareil, veuillez lire ce manuel attentivement. Assurez-vous de le garder à portée de la main pour référence ultérieure.
- Ce manuel couvre les instructions de branchement et d'utilisation de base pour deux modèles.

### Acerca de este manual
- Antes de instalar y usar este aparato, lea detenidamente este manual. Asegúrese de guardarlo a mano para futuras referencias.
- Este manual le indica las conexiones básicas y las instrucciones de funcionamiento de dos modelos.

### Nota su questo manuale
- Leggere attentamente questo manuale prima di passare all'installazione ed all'uso di questo apparecchio. Conservare il manuale in un posto sicuro per riferimenti futuri.
- Questo manuale contiene istruzioni per i principali collegamenti ed il funzionamento di due modelli.

# PRECAUTION

**WARNING:** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR OTHER MOISTURE.
To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.
If the power supply cord (AC power cord) of this appliance is damaged, it must be replaced. Return to a SANYO Authorised Service Centre for replacement of the cord.

## Location

For safe operation and satisfactory performance of your unit, keep the following in mind when selecting a place for its installation:

Shield it from direct sunlight and keep it away from sources of intense heat.

Avoid dusty or humid places.

Avoid places with insufficient ventilation for proper heat dissipation. Do not block the ventilation holes at the top and bottom of the unit. Do not place the unit on a carpet because this will block the ventilation holes.

Install the unit in a horizontal position only.

Avoid locations subject to strong vibrations.

Avoid moving the unit between cold and hot locations.

Do not place the unit directly on top of a monitor TV, as this may cause playback or recording problems.

## Avoiding Electrical Shock and Fire

Do not handle the power cord with wet hands.

Do not pull on the power cord when disconnecting it from an AC wall outlet. Grasp it by the plug.

If any liquid is spilled on the unit, unplug the power cord immediately and have the unit inspected at a factory-authorised service centre.

Do not place anything directly on top of this unit.

## SERVICE

This unit is a precision instruments and if treated with care, will provide years of satisfactory performance. However, in the event of a problem, the owner is advised not to attempt to make repairs or open the cabinet. Servicing should always be referred to your dealer or Sanyo Authorized Service Centre.

### CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Discard used batteries according to the manufacture's instructions.

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# MAIN FEATURES

This digital video recorder can be used to store images recorded by a monitoring camera onto its built-in hard disk.

This digital video recorder can display images that are being recorded by a camera in a split-screen (16, 9, 4), and it can also display images that have already been recorded in a split-screen.

The DSR-3009P model split-screen display is capable of 4-screen or 9-screen displays only.

- Equipped with a large-capacity 3.5-inch hard disk drive allowing recording and playback from the built-in hard disk
- Playback can be carried out at the same time as recording.
- Alarm recording tracks movements of suspicious individuals.
- Timer recording lets you record different sessions each day.
- Pre-alarm recording records the images immediately before an alarm.
- Audio recording and playback are also possible.
- Recorded images can be copied using CompactFlash cards.
- Includes a variety of search functions.
  - ☞ Alarm searching using an alarm event list or thumbnail alarm images
  - ☞ Time and date searches based on recording date and time
  - ☞ Motion sensor detecting by searching for the movement of a suspicious individual
- A zoom function allows images being monitored and played back to be enlarged for display.
- The image quality mode can be selected from five modes.
- High-speed switching for each field at maximum speed
- Single-screen, 4-screen, 9-screen and 16-screen display, camera images and video playback images can be displayed in the lower-right corner of the screen, and automatic switching is also possible.
- A single-screen can be displayed during spot monitoring and the alarm screen can be displayed when an alarm occurs.
- Timer setting allows the following settings to be made for each camera.
  - ☞ The monitor mask function allows images from selected cameras to be covered by gray patterns during certain time periods.
  - ☞ Automatic switching of camera images selected by timer period
  - ☞ Setting of automatic screen switching speed for each camera for four different daily time zones.
- A monitor masking function hides the images for specified cameras with gray patterns so that they cannot be monitored.
- Motion sensor detection is possible for each camera. Moving objects can be given recording priority and alarm operation is possible.
- If a signal loss is detected, the monitor screen image can be replaced by a test pattern or a still image, even if the camera image has been lost as a result of the interruption.
- Two levels of security lock are available.
- A PC card-type network card (recommended) can be used to carry out network control.
- Includes an RS-232C interface for computer control.
- Connection to a system controller (sold separately) is possible using an RS-485 interface.
- A PC card-type SCSI card can be used for backups to DDS (DAT) drives.
- A PC card-type SCSI card can be used to copy data to YAMAHA CD-R drives.
- Equipped with MONITOR OUT 2 and S-Video signal input and output connectors.
- Connection to digital equipment such as a digital video recorder (sold separately) is possible using digital connectors.

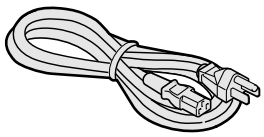
### Setting-up environment

Leave a space of at least 5 cm between the digital video recorder and other nearby objects.

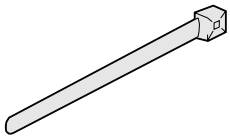
Ventilation holes are located at both sides and on the base of the digital video recorder. Do not allow these ventilation holes to be covered when setting up the recorder.

Furthermore, avoid using the digital video recorder in places with poor ventilation.

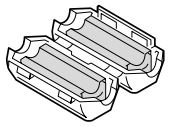
# ACCESSORIES



Power cord



Fixer power cord tie



Ferrite core x 3

## Hard disk protection

If any hard disk format errors are found when the power is turned on, the whole hard disk is checked automatically. If any further problems are found with the hard disk, the POWER indicator flashes. Please contact the place of purchase if you need to reformat the hard disk or make backups of any images. The hard disk is very sensitive to dust, vibration and shocks, and it should not be used in places near sources of magnetic fields. Be sure to observe the following points in order to prevent any loss of data.

- Do not subject the digital video recorder to shocks.
- Do not use the digital video recorder in places where it will be subjected to vibration or places which are unstable.
- Do not disconnect the power cord while recording or playback is in progress.
- Do not use in places which are subject to rapid changes in temperature (changes of around 10°C in an hour).
- If the digital video recorder is moved to a place with a large difference in temperature or a high level of humidity, condensation may form. If the digital video recorder is used with condensation inside it, operating problems may occur.
- Do not install the digital video recorder in places which are constantly vibrating, such as vehicles or trains.

### The hard disk and cooling fan are consumables.

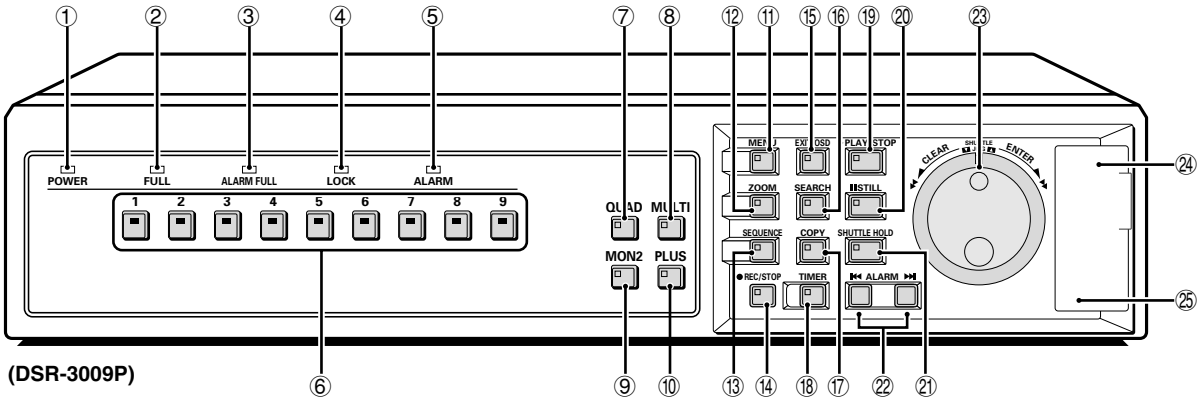
- These parts should generally be replaced after 2 years of use (for the hard disk) or 3 years of use (for the cooling fan) at normal temperatures of 25°C. These periods of time are intended as guides only, and are not a guarantee of product performance.

### For important recordings

- Always check whether a recording has been recorded properly.
- In case a recording was not recorded properly with this because of faulty connections with other equipment or a correct playback is not possible, any claims for compensation will be declined.
- For important recordings, it is recommended to make a periodical backup copy for protection against loss from any malfunction or accident.

# PART NAMES

## ■ Front panel




(DSR-3009P)

① **POWER indicator**

- Illuminates (red) when the power cord plug is inserted into a wall outlet.
- Flashes when there is a problem with the internal hard disk or fan.

② **FULL indicator**

Flashes when overwriting is set to off and the remaining space in the normal recording area of the hard disk drops to 1%*.

In addition, if the amount of remaining space in the recording area drops to 0%, recording stops and the indicator stops flashing and illuminates steadily. If the "**AREA FULL RESET**" command in the main menu (see p. 51) is used, the indicator will switch off.

(* This can be changed using the menu settings.)

③ **ALARM FULL indicator**

Flashes when overwriting is set to off and the remaining space in the alarm recording area of the hard disk drops to 1%*.

In addition, if the amount of remaining space in the recording area drops to 0%, recording stops and the indicator stops flashing and illuminates steadily. If the "**AREA FULL RESET**" command in the main menu (see p. 51) is used, the indicator will switch off.

(* This can be changed using the menu settings.)

④ **LOCK indicator**

Illuminates when the security lock is engaged using the menu and operations are locked.

If a button is pressed while the lock is engaged, the buzzer sounds. The indicator will flash at this time and the password entry screen will be displayed on the monitor.

⑤ **ALARM indicator**

Illuminates during pre-alarm recording.

Flashes during alarm recording.

⑥ **Camera select buttons and indicators**

When a camera is connected to one of the camera video input (CAMERA IN) connectors at the rear of the digital video recorder and the corresponding button is pressed, the indicator illuminates and images from that camera are displayed.

**(Indicators)**

- During split-screen monitoring, the indicators for all of the cameras being displayed in the split-screen illuminate.
- When there is alarm input, the indicator for the alarm input camera flashes.

⑦ **4-screen display button and indicator (QUAD)**

This button lets you switch the display to a 4-screen display while monitoring is being carried out using a single-screen, 16-screen display or 9-screen display.

When the **QUAD** button is pressed, the screen switches to 4-screen display, and the 4-screen display changes (1 – 4, 5 – 8, 9 – 12, 13 – 16) each time the **QUAD** button is then pressed. The indicator illuminates to match the 4-screen display.

- For the DSR-3009P model, the 4-screen display changes each time the **QUAD** button is pressed (1 – 4, 5 – 8, 9 – 3).

⑧ **Multiple display button and indicator (MULTI)**

This button lets you switch the display to a 16-screen display or 9-screen display while monitoring is being carried out using the single-screen or 4-screen display.

When the **MULTI** button is pressed, the 9-screen display or 16-screen display appears, and the split-screen display then changes each time the button is pressed again.

- For the DSR-3009P model, a 9-screen display will appear. The 16-screen display is not available.

⑨ **Monitor 2 setting button (MON2)**

If this button is pressed while a monitor is connected to the MON2 connector at the rear of the digital video recorder, the monitor 2 output status can be changed. The default setting is for automatic switching display. If a camera select button is pressed, images from the selected camera can be displayed.

The indicator illuminates while monitoring is in progress.

⑩ **Plus display button and indicator (PLUS)**

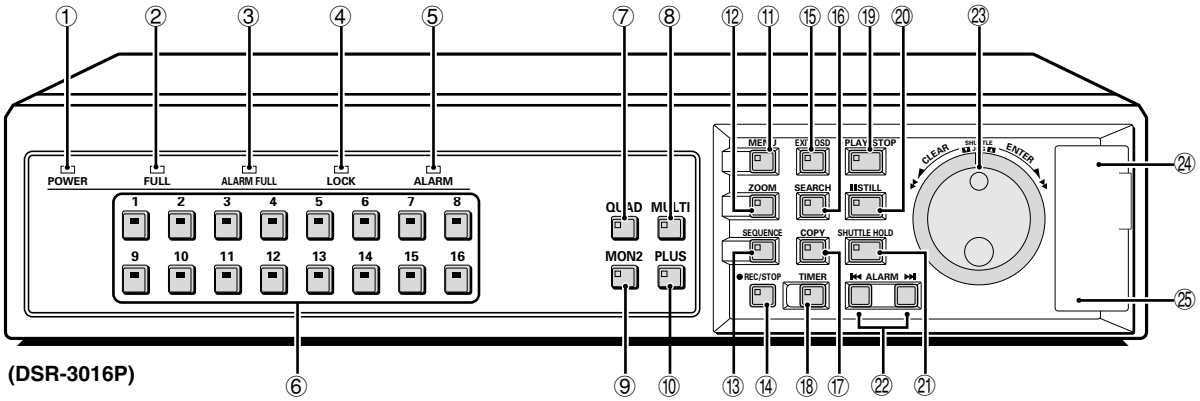
This button lets you display a specified image in the lower-right quarter of the screen area (6-screen display or 13-screen display).

When the **PLUS** button is pressed, the lower-right quarter of the screen is displayed and the indicator flashes. If you press the camera select button for the images required, those images appear in the quarter screen. The following operations can be carried out when this quarter screen is being displayed.

- If the **MULTI** button is pressed, the screen changes to a 6-screen display or 13-screen display. The image in the quarter screen remains unchanged.

  (For the DSR-3009P model, only the 6-screen display is available.)
- If the **SEQUENCE** button is pressed, the SEQUENCE indicator flashes and the quarter screen automatically changes. The automatic screen switching speed can be set using the menu screen. (See page 82.)
- If you press the **PLUS** button twice during playback, the camera images and the playback images are displayed.

# PART NAMES




(DSR-3016P)

⑪ **MENU button and indicator**

Used to display the menu screens (setting screens).

⑫ **ZOOM button and indicator**

Used to display the zoom screen in a single screen during image monitoring or playback.

The indicator flashes when the zoom screen is displayed.

⑬ **Automatic camera switching button and indicator (SEQUENCE)**

This button is used to automatically change the camera images that are being monitored in the single-screen, 4-screen or quarter-screen (plus-screen) display.

When the **SEQUENCE** button is pressed, the indicator flashes and the screen changes automatically. The camera indicator also changes to match the images on the screen.

⑭ **REC/STOP button and indicator**

Use to start normal recording.

The indicator illuminates during recording.

If the button is pressed for 2 seconds or more during recording, recording stops and the indicator switches off.

⑮ **EXIT/OSD button and indicator**

- When a menu screen is displayed

  The main menu or sub-menu is exited.
- During recording, playback or while stopped

  If the button is pressed during recording or playback, superimposed information such as time and date and alarm status changes in the following order:

  Displayed at top → Displayed at bottom → Not displayed

  The indicator illuminates while information is displayed.

⑯ **SEARCH button and indicator**

If the button is pressed during recording or while the digital video recorder is stopped, the indicator illuminates and the search playback screen is displayed. If the button is pressed once more, the search playback screen is exited.

⑰ **COPY button and indicator**

If this button is pressed while the images being played back in a single screen are paused, the paused image is copied to the archive area of the hard disk or to a CompactFlash card, microdrive or CD-R drive.

The indicator illuminates during copying.

If the button is pressed during recording or while the digital video recorder is stopped, backups (copying to DAT) can be carried out.

⑱ **TIMER button and indicator**

When the button is pressed when recording is stopped, the digital video recorder switches to timer recording standby mode, and when the setting time is reached, timer recording starts.

⑲ **PLAY/STOP button and indicator**

The indicator illuminates and playback of images in the normal recording area and alarm recording area starts.

If pressed during playback, playback stops.

⑳ **STILL button and indicator**

When this button is pressed while images are being monitored or played back in a single screen, the indicator illuminates and the screen images are paused.

If it is pressed again, playback resumes.

㉑ **SHUTTLE HOLD button and indicator**

If this button is pressed continuously for 2 seconds or more when the security lock has been set, the security lock is activated.

This locks the speed for playback and frame advance.

The indicator illuminates while locked.

㉒ **ALARM buttons (⏮ ALARM ⏭)**

When these buttons are pressed during playback, playback skips to the previous or next alarm recording.

㉓ **Jog (inner) and shuttle (outer) dials**

- During playback

  The jog dial changes the playback speed.

  The shuttle dial fast-forwards and rewinds.
- Menu screens

  The jog dial moves the cursor and changes settings.

  The shuttle dial accepts settings.

㉔ **CompactFlash card slot**

Insert a CompactFlash card or microdrive here.

㉕ **MENU RESET button**

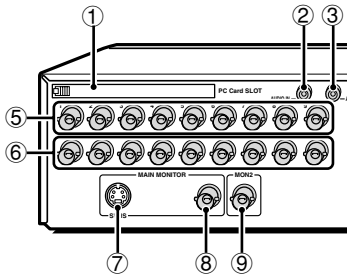
Used to initialize menu settings (displayed menu settings only).

If this button is pressed while images are being monitored, the time is reset (0 minutes and 0 seconds).

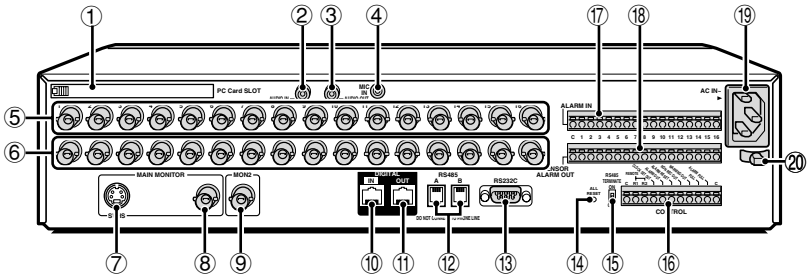
# PART NAMES

## ■ Rear panel

**DSR-3009P**




**DSR-3016P**




① **PC card slot**
Connect a network card or SCSI card (sold separately) here.
**Note:** The PC card slot is for 16-bit 5 V cards only. Do not use 32-bit card bus types of card, as they may damage the PC card slot of the digital video recorder.

② **AUDIO IN terminal**

③ **AUDIO OUT terminal**

④ **MIC IN terminal**

⑤ **VIDEO IN terminal**
The DSR-3009P model has nine input terminals.

⑥ **VIDEO OUT terminal**
The DSR-3009P model has nine output terminals.

⑦ **MAIN MONITOR S-VIDEO output terminal**

⑧ **MAIN MONITOR output terminal**

⑨ **MON2 output terminal**

⑩ **DIGITAL IN terminal**

⑪ **DIGITAL OUT terminal**

⑫ **RS485 control terminal**

⑬ **RS-232C terminal**

⑭ **ALL RESET button**

⑮ **RS-485 termination switch**

⑯ **Control connector**

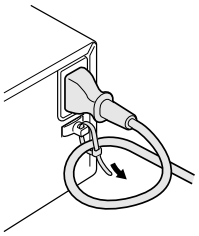
| Pin | Signal |
|---|---|
| **C** | Ground |
| **REMOTE R1** | Remote control input 1 |
| **REMOTE R2** | Remote control input 2 |
| **CLOCK SET OUT** | Clock setting output (See page 46.) |
| **ALARM OUT** | Alarm output |
| **ALARM RESET** | Alarm reset |
| **NON REC OUT** | Non REC output |
| **WARNING OUT** | HDD error warning output |
| **FULL** | HDD space warning output |
| **ALARM FULL** | Alarm recording area space warning output |
| **C** | Ground |

⑰ **ALARM IN terminals (1 – 16)**
These terminals send alarm signals resulting from the operation of externally-connected alarm switches to the ALARM OUT control terminal for output.
The DSR-3009P model has nine alarm input terminals.

⑱ **SENSOR ALARM OUT terminal (1 – 16)**
When a response is received from a motion sensor that has been set using the menu settings, an alarm signal is output. (open collector)
The DSR-3009P model has nine alarm output terminals.

⑲ **AC power socket (AC IN~)**
Securely insert the accessory power cord here.

⑳ **Power cord holder**
Secure the power cord to the holder using the accessory cord tie as shown in the illustration.



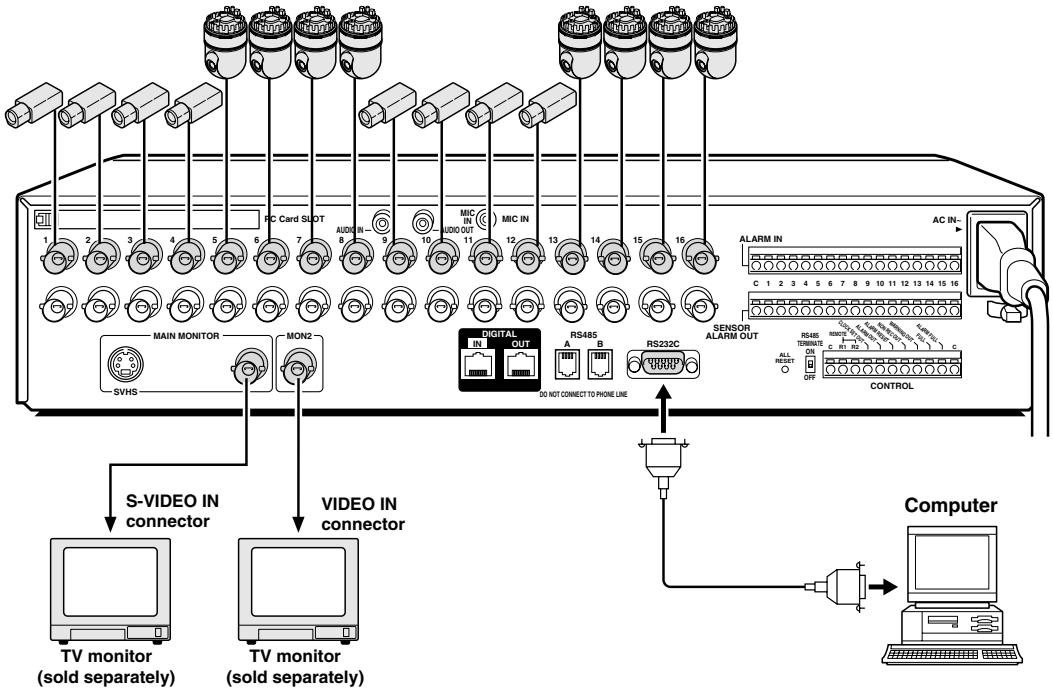
# CONNECTIONS

Turn off the power for all components before connecting them.

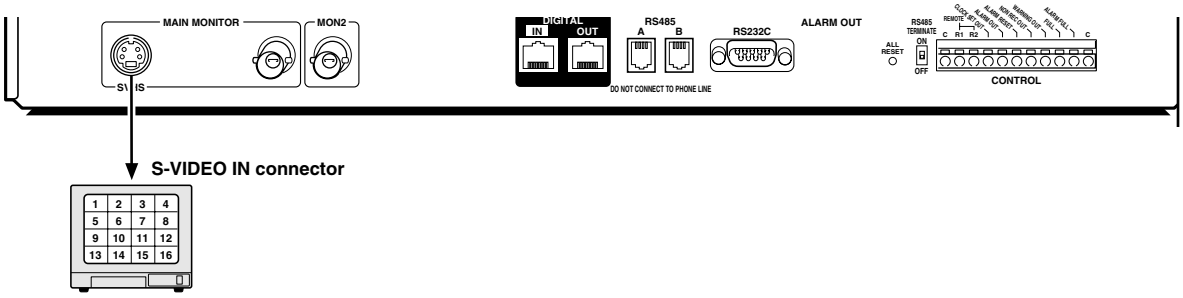
Be sure to carefully read the Instruction Manual for all equipment being connected to the digital video recorder.
If the connections are incorrect, smoke or operating malfunctions may result.

## ■ Basic connections (DSR-3016P model)

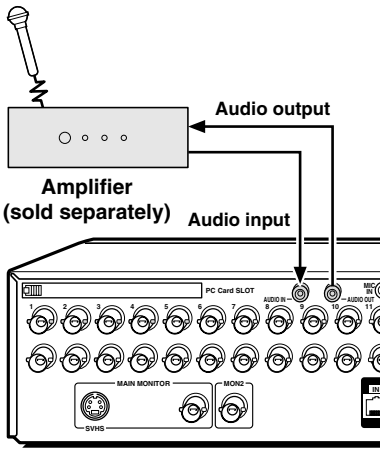
Nine cameras can be connected to the DSR-3009P model.




## ■ Connecting high image quality (S-VHS) video equipment

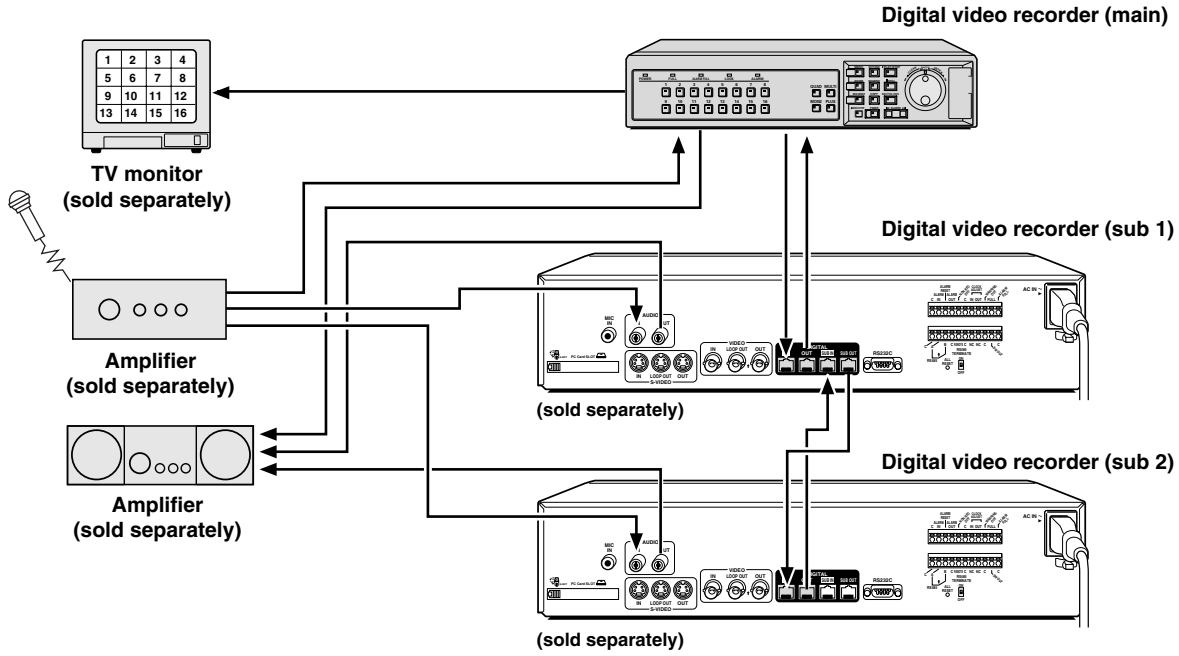



## ■ Connecting to an Amplifier



# CONNECTIONS

## ■ Digital series connections



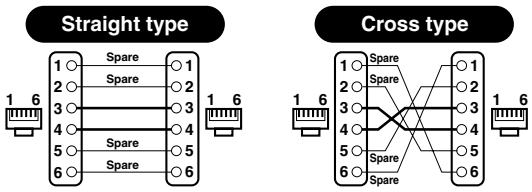

## ■ System control connections

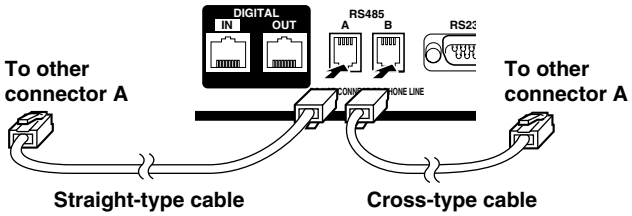
Use the RS485 connector to connect a system controller (sold separately) to the digital video recorder. After connecting the system controller, you will need to carry out the settings that are given in the RS-232C/RS-485 SET menu. (See page 76.)

### A When using the RS485 (RJ-11) connector

Connect modular cables (sold separately) to the RS485 control connectors at the rear of the digital video recorder.

- **If using a straight-type cable**
  Connect connector A to connector A and connector B to connector B.
- **If using a cross-type cable**
  Connect connector A to connector B and connector B to connector A.



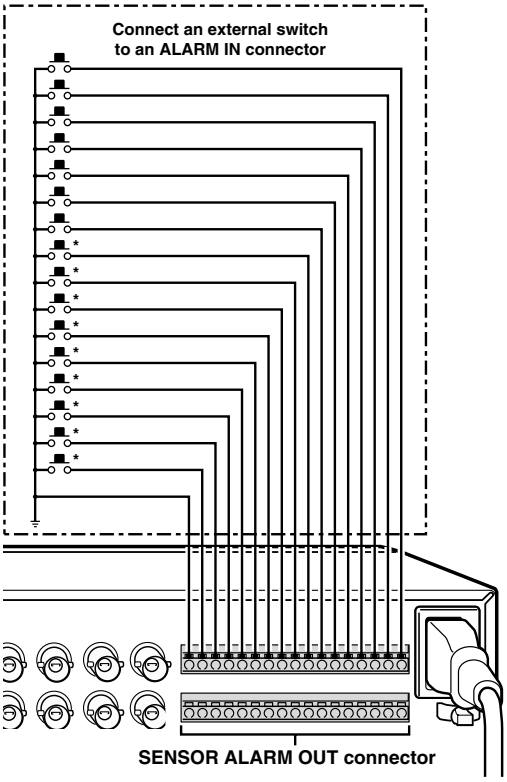



# CONNECTIONS

## External alarm sensor setup

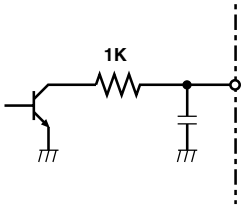
In order to make an external alarm sensor operate, an external switch must be connected to an ALARM IN connector. When an intruder activates the external switch (such as by opening a door), an alarm signal is received and an alarm can be made to sound.

The DSR-3009P model uses the connectors marked *.




## Using as a monitor board during a motion sensor alarm

When the motion sensor built into the digital video recorder responds to an alarm, it outputs an alarm signal to the SENSOR ALARM OUT connector. If a switching circuit such as a warning lamp is connected to this connector, the warning lamp will illuminate when there is a response from the motion sensor. If the warning lamp is fixed somewhere in the layout diagram for an area such as a factory, the location of the camera can be ascertained in an instant during an emergency. The connector is always open. The pin corresponding to the number of the camera that generates a sensor response switches to Low.



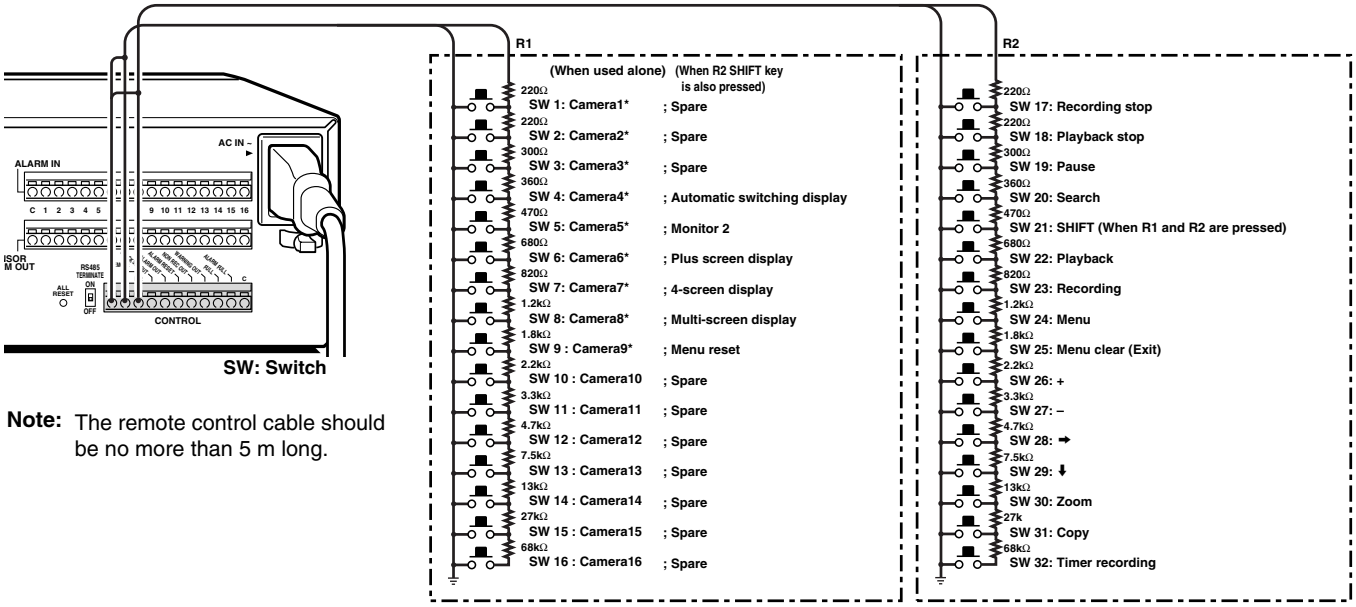

**Rated values for each pin (at 25˚C)**

- **Max. current 25mA**
- **Max. voltage 25V**
- **Max. power 40mW**

## Connecting a remote control circuit

If a remote control circuit is constructed as shown in the illustration and connected to the remote control input (R1 and R2) terminals of the CONTROL connector, the digital video recorder can be operated by remote control. (Contact LOW input)

The DSR-3009P model can control up to nine cameras.


R1
(When used alone)
(When R2 SHIFT key is also pressed)
220Ω SW 1: Camera1* ; Spare
220Ω SW 2: Camera2* ; Spare
300Ω SW 3: Camera3* ; Spare
360Ω SW 4: Camera4* ; Automatic switching display
470Ω SW 5: Camera5* ; Monitor 2
680Ω SW 6: Camera6* ; Plus screen display
820Ω SW 7: Camera7* ; 4-screen display
1.2kΩ SW 8: Camera8* ; Multi-screen display
1.8kΩ SW 9 : Camera9* ; Menu reset
2.2kΩ SW 10 : Camera10 ; Spare
3.3kΩ SW 11 : Camera11 ; Spare
4.7kΩ SW 12 : Camera12 ; Spare
7.5kΩ SW 13 : Camera13 ; Spare
13kΩ SW 14 : Camera14 ; Spare
27kΩ SW 15 : Camera15 ; Spare
68kΩ SW 16 : Camera16 ; Spare
R2
220Ω SW 17: Recording stop
220Ω SW 18: Playback stop
300Ω SW 19: Pause
360Ω SW 20: Search
470Ω SW 21: SHIFT (When R1 and R2 are pressed)
680Ω SW 22: Playback
820Ω SW 23: Recording
1.2kΩ SW 24: Menu
1.8kΩ SW 25: Menu clear (Exit)
2.2kΩ SW 26: +
3.3kΩ SW 27: –
4.7kΩ SW 28: ➡
7.5kΩ SW 29: ⬇
13kΩ SW 30: Zoom
27k SW 31: Copy
68kΩ SW 32: Timer recording
ALARM IN
AC IN
CONTROL
SW: Switch

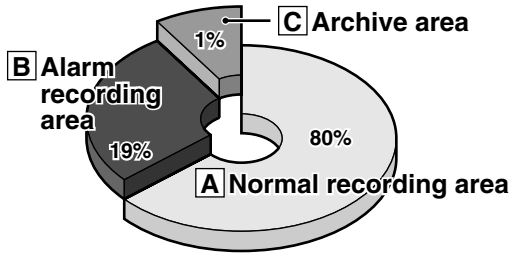
**Note:** The remote control cable should be no more than 5 m long.

# BUILT-IN HARD DISK

## ■ Hard disk

### Recording areas

The recording areas on the hard disk (normal recording area: 80%, alarm recording area: 19%, archive area: 1%) are established automatically when the power for the digital video recorder is turned on. Images are recorded in the normal recording area when the **REC/STOP** button is pressed, and they are recorded in the alarm recording area when an alarm occurs. This is called the default condition, and the following detailed settings can be confirmed in the sections on "**RECORDING IMAGES IN THE NORMAL RECORDING AREA**" and "**RECORDING IMAGES IN THE ALARM RECORDING AREA**" (See page 22.) which are explained later. Furthermore, settings such as the recording areas and picture quality can be changed using the menu screens.




**Hard disk recording areas**

### A Normal recording area

- When the **REC/STOP** button is pressed while monitoring is in progress, images are recorded in the normal recording area.
- When start and end times are entered for each day of the week and are then enabled, timer recording is automatically carried out in the normal recording area between the times that have been set.

### B Alarm recording area

ALARM REC MODE SET menu settings are required.

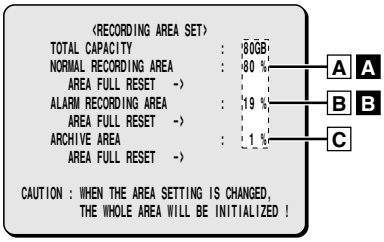
- Alarm recording is enabled when ALARM RECORDING is set. When a suspicious person is detected by the switch or motion sensor that is connected to the alarm input terminal, an alarm is recorded in the alarm recording area.
- Pre-alarm recording is enabled when PRE-ALARM RECORDING is set. Pre-alarm recording repeatedly records the same images as for normal recording in the alarm recording area, and overwrites these images after the set time interval, until an alarm is detected. When pre-alarm recording is set, the image immediately before an alarm occurred can be recorded.

### C Archive area

This is the area for copying important images from the normal recording area and the alarm recording area. The size of the archive area can be set to a maximum of 10 GB (12.5% of total capacity when using an 80-GB hard disk 6% of total capacity when using an 160-GB hard disk) by changing the size of the normal recording area or the alarm recording area.

### Menu screen (initial setting)

This can be displayed by pressing the **MENU** button.


‹RECORDING AREA SET›
TOTAL CAPACITY : 80GB
NORMAL RECORDING AREA : 80 %
AREA FULL RESET ->
ALARM RECORDING AREA : 19 %
AREA FULL RESET ->
ARCHIVE AREA : 1 %
AREA FULL RESET ->
CAUTION : WHEN THE AREA SETTING IS CHANGED,
THE WHOLE AREA WILL BE INITIALIZED !
A A
B B
C

① **PICTURE QUALITY: NORMAL**

Picture quality can be selected from five options.

The recording speed changes in accordance with the picture quality selected.

② **AUDIO RECORDING: Can be set to ON or OFF.**

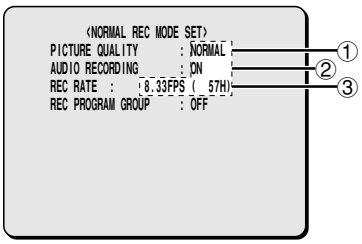
③ **REC RATE: Shows the recording interval and the recording time.**

Refer to the recording speed table for further details.

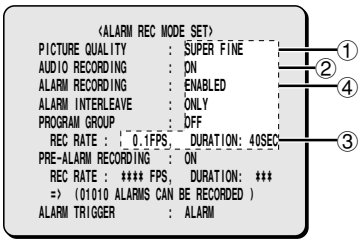
④ **ALARM RECORDING: Can be set to ON or OFF.**

When alarm recordings are to be made, select a setting such as ENABLED for the OFF setting. The recording speed and alarm duration will be displayed

**A Setting screen for normal recording area picture quality, recording speed, etc.**




**B Setting screen for alarm recording area picture quality, recording speed, etc.**



# BUILT-IN HARD DISK

## ■ Recording speed tables (The recording time may vary depending on the images being recorded.)

These recording speed tables show the recording times for various picture quality and frame/field settings when recording in the normal recording area of the hard disk (80 GB). They do not include audio recording settings.

The recording times for the normal recording area and the alarm recording area represent the recording time values given in the recording speed tables, multiplied by the percentages for the normal recording area and alarm recording area that have been set using the recording area setting menu commands.

### ■ When recording with an 80-GB hard disk at 100% capacity

| Recording Rate (field/sec) | RECORDING TIME | | | | |
|---|---|---|---|---|---|
| | BASIC | NORMAL | ENHANCED | FINE | SUPER FINE |
| | 15 kB | 22 kB | 30 kB | 42 kB | 56 kB |
| 50.00 | 25H | 18H | 13H | 9H | 7H |
| 25.00 | 51H | 36H | 27H | 19H | 14H |
| 16.67 | 76H | 54H | 40H | 29H | 22H |
| 12.50 | 102H | 72H | 54H | 39H | 29H |
| 8.33 | 153H | 108H | 81H | 59H | 44H |
| 6.25 | 204H | 144H | 108H | 78H | 59H |
| 5.00 | 255H | 180H | 135H | 98H | 74H |
| 4.17 | 306H | 217H | 162H | 118H | 89H |
| 3.57 | 357H | 253H | 189H | 138H | 104H |
| 3.13 | 408H | 289H | 217H | 157H | 119H |
| 2.78 | 459H | 325H | 244H | 177H | 134H |
| 2.50 | 510H | 361H | 271H | 197H | 149H |
| 2.27 | 561H | 397H | 298H | 217H | 164H |
| 1.92 | 663H | 470H | 352H | 256H | 194H |
| 1.67 | 765H | 542H | 406H | 295H | 224H |
| 1.47 | 868H | 614H | 461H | 335H | 254H |
| 1.32 | 970H | 687H | 515H | 374H | 284H |
| 1.19 | 1072H | 759H | 569H | 414H | 314H |
| 1.09 | 1174H | 831H | 623H | 453H | 344H |
| 1.00 | 1276H | 904H | 678H | 493H | 374H |
| 0.50 | 2553H | 1808H | 1356H | 986H | 748H |
| 0.33 | 3829H | 2712H | 2034H | 1479H | 1122H |
| 0.25 | 5106H | 3616H | 2712H | 1972H | 1496H |
| 0.20 | 6382H | 4521H | 3390H | 2466H | 1870H |
| 0.10 | 12765H | 9042H | 6781H | 4932H | 3741H |
| 0.05 | 25531H | 18084H | 13563H | 9864H | 7483H |
| 0.03 | 38296H | 27126H | 20345H | 14796H | 11224H |

The tables below are recording time tables provided for reference if the total capacity of the hard disk has been increased to 160 GB. (Contact the place of purchase for details on increasing the capacity of the hard disk.)

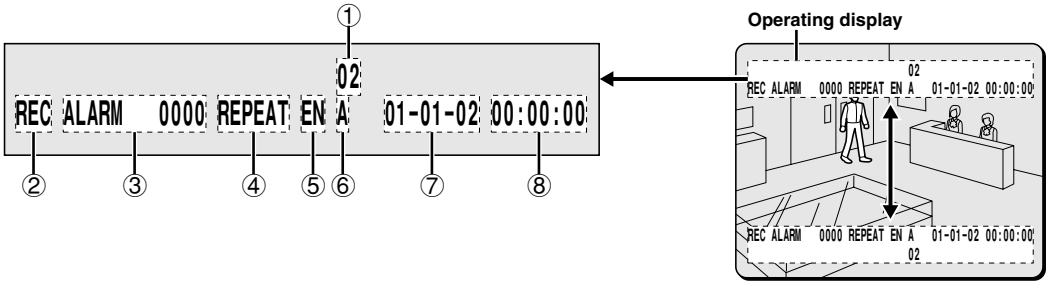
### ■ When recording with a 160-GB hard disk at 100% capacity

| Recording Rate (field/sec) | RECORDING TIME | | | | |
|---|---|---|---|---|---|
| | BASIC | NORMAL | ENHANCED | FINE | SUPER FINE |
| | 15 kB | 22 kB | 30 kB | 42 kB | 56 kB |
| 50.00 | 51H | 36H | 27H | 19H | 14H |
| 25.00 | 102H | 72H | 54H | 39H | 29H |
| 16.67 | 153H | 108H | 81H | 59H | 44H |
| 12.50 | 204H | 144H | 108H | 78H | 59H |
| 8.33 | 306H | 217H | 162H | 118H | 89H |
| 6.25 | 408H | 289H | 217H | 157H | 119H |
| 5.00 | 510H | 361H | 271H | 197H | 149H |
| 4.17 | 612H | 434H | 325H | 236H | 179H |
| 3.57 | 714H | 506H | 379H | 276H | 209H |
| 3.13 | 816H | 578H | 434H | 315H | 239H |
| 2.78 | 919H | 651H | 488H | 355H | 269H |
| 2.50 | 1021H | 723H | 542H | 394H | 299H |
| 2.27 | 1123H | 795H | 596H | 434H | 329H |
| 1.92 | 1327H | 940H | 705H | 512H | 389H |
| 1.67 | 1531H | 1085H | 813H | 591H | 448H |
| 1.47 | 1736H | 1229H | 922H | 670H | 508H |
| 1.32 | 1940H | 1374H | 1030H | 749H | 568H |
| 1.19 | 2144H | 1519H | 1139H | 828H | 628H |
| 1.09 | 2348H | 1663H | 1247H | 907H | 688H |
| 1.00 | 2553H | 1808H | 1356H | 986H | 748H |
| 0.50 | 5106H | 3616H | 2712H | 1972H | 1496H |
| 0.33 | 7659H | 5425H | 4069H | 2959H | 2244H |
| 0.25 | 10212H | 7233H | 5425H | 3945H | 2993H |
| 0.20 | 12765H | 9042H | 6781H | 4932H | 3741H |
| 0.10 | 25531H | 18084H | 13563H | 9864H | 7483H |
| 0.05 | 51062H | 36168H | 27126H | 19728H | 14966H |
| 0.03 | 76593H | 54253H | 40690H | 29592H | 22449H |

Reference: 24H = 1 day, 168H = 1 week, 720H = 1 month, 8760H = 1 year

# BUILT-IN HARD DISK

When the power for the digital video recorder is turned on, the operating display appears at the top of the monitor screen. This operating display shows information which is essential for operation, such as the date, time and picture quality.




## ■ Operating display

### ☞ Insert the power cord into a wall outlet and turn on the power.

The POWER indicator illuminates, and after approximately 15 seconds the EXIT/OSD indicator illuminates. The camera images then appear on the monitor screen and the operating display appears at the top of the screen.

**Note:** If you press the **EXIT/OSD** button repeatedly, you can change the display position for the operating display or make it disappear.

① **Camera number display**

This displays the number of the camera that is currently being played back or monitored.

② **Operating symbol display**

These symbols appear during recording and playback.

| | | | |
|---|---|---|---|
| **REC** | : Recording | ▶▶ | : Fast forward |
| ▶ | : Playback | ◀◀ | : Rewind |
| ◀ | : Reverse playback | ❚❚▶ | : Slow playback |
| ❚❚ | : Stopped | ◀❚❚ | : Slow reverse playback |

**Note:** If recording and playback are being carried out at the same time, the playback symbol (▶) appears.

③ **Alarm display and alarm number display**

When an alarm setting is made using the ALARM REC MODE SET menu item, The following display appears in the alarm display.

However, the PRE display appears when pre-alarm recording has been set. When an alarm occurs, the PRE is replaced by ALARM and the number of alarms also appears. The alarm display shows the cumulative number of alarms.

- If ALARM REC MODE SET is set: **"ALARM**" appears.
  The "**ALARM**" display flashes during alarm recording.
- If PRE ALARM RECORDING is set: "**PRE**" appears.
- When playing images from the archive area: ARCHIVE appears.
- When an external alarm is received: "**EA**" flashes to the left of the camera number.
- When a motion sensor alarm is received: "**SA**" flashes to the left of the camera number.

④ **Amount of recording area remaining**

"**REPEAT**" appears when overwriting is enabled. Furthermore, if overwriting has been disabled (OVERWRITE: OFF) for the normal recording area and the alarm recording area, the amount of space remaining appears as a percentage.

You can change the amount of recording area remaining using the RECORDING AREA SET menu item. (See page 51.)

⑤ **Picture quality display**

This shows the picture quality for images that are recorded on the hard disk. The default setting is EN (Enhanced). The display changes when the picture quality is changed using the NORMAL REC MODE SET menu item.

- **BA:** Basic
- **NO:** Normal
- **EN:** Enhanced
- **FI:** Fine
- **SF:** Super Fine

⑥ **Audio recording display**

"**A**" appears when audio recording is enabled. See page 54 for details on the audio recording settings.

⑦ **Date display**

When the digital video recorder is first turned on, the date appears as 01-01-02 (day, month, year). Make sure that you use the menus to set the correct date.

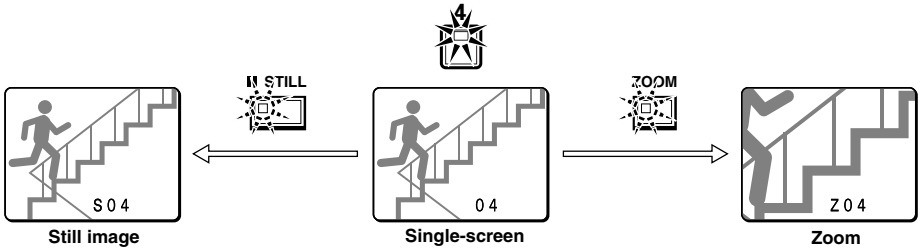
⑧ **Time display**

When the digital video recorder is first turned on, the time appears as 00:00:00, and the time starts counting after the date has been set. The digital video recorder uses the date and time to control recording and playback, so if the date and time have not been set, the correct images cannot be retrieved. Make sure that you use the menus to set the correct time. If this is not set, recording will not be possible.

**Note: During recording with this unit, playing back, copying and transferring pictures is possible. However, because of the recording priority the response of the other operations becomes slower.**

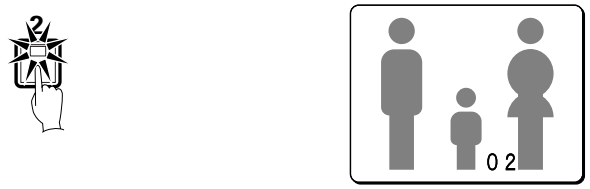
# VIEWING CAMERA IMAGES

## ■ Viewing a single-screen image



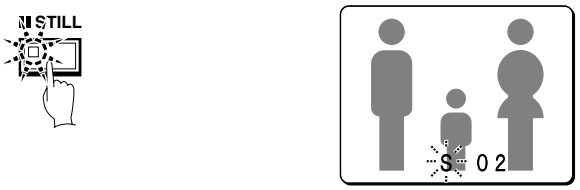

### Setting the camera image to single-screen display

**1** **Press a camera select button (example: 2).**
The camera 2 image appears as a single-screen.

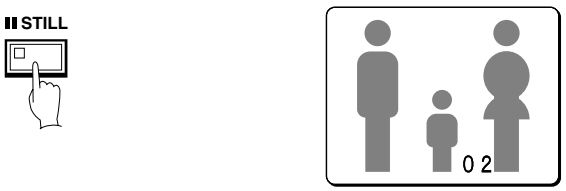



### Pausing images

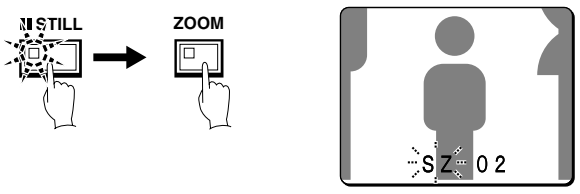
**1** **Press the STILL button.**
The image will be paused.




**2** **To cancel the still image, press the STILL button once more.**
Pausing will be canceled and normal images will appear.

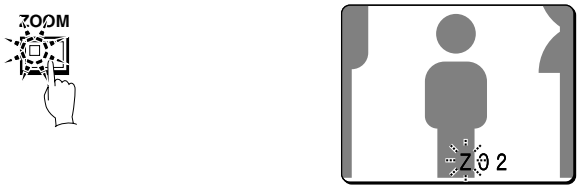



**Note:** If you press the **ZOOM** button while the image is paused, the still image will be enlarged. To return to the original still image, press the **ZOOM** button once more.




### Enlarging images

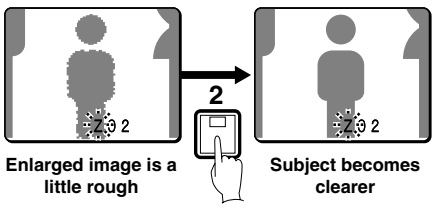
**1** **Press the ZOOM button.**
The images will be enlarged.



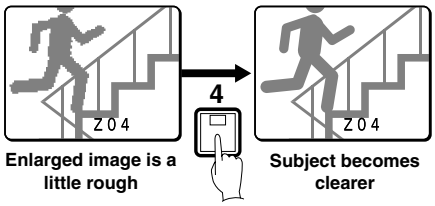

**Note:** If you set a zoom frame, the area of the image inside the zoom frame will be enlarged. (See page 15.)

**If you press the camera select button while zooming, the image will be easier to see due to the movement of the subject. The following changes will occur if you press the camera select button repeatedly.**

- **An image with little movement (almost a still image)**
  Large subjects become clearer and moving subjects appear a little rough.



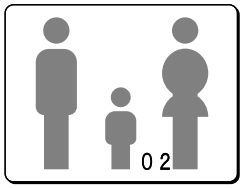

- **An image with large movement (normal viewing)**
  The image of a moving subject becomes clearer and subjects with little movement appear a little rough.




**Note:** If you press some other camera select button while zooming is in progress, the zooming will be canceled and the display will change to a single-screen image for the selected button.

**2 To return an enlarged image to normal image display, press the ZOOM button once more.**

The zoom will be canceled and normal images will appear.

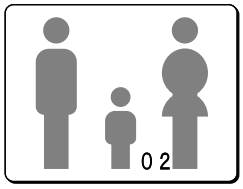



### Example: To zoom in on the camera 2 image and move the zoom frame

You can select the zoom position by means of the zoom frame which appears on the screen. The zoom frame is set initially at the middle of the screen.

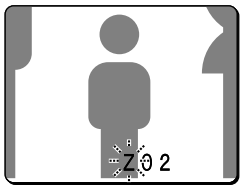
**1 Press camera select button 2.**

The camera 2 image will appear in a single-screen display.



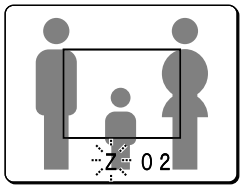

**2 Press the ZOOM button.**

The images will be enlarged.




**3 Press and hold camera select button 2 for about 3 seconds or more.**

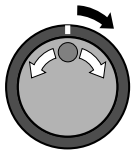
The zoom will be canceled and the normal image will appear, and the zoom frame (□) will appear on the screen.

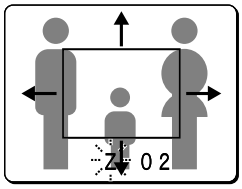



**Note:** If the zoom frame remains on the screen for about 10 seconds without being adjusted, the screen will return to zoom display. To make the zoom frame reappear, press and hold camera select button 2 again for 3 seconds or more.

**4 Move the zoom frame to the section of the image to be enlarged.**

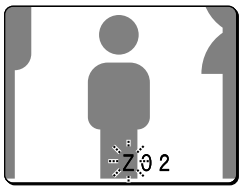
- If you turn the jog dial clockwise, the zoom frame will move to the right. If you turn it counterclockwise, the zoom frame will move to the left.
- If you turn the shuttle dial clockwise, the movement direction changes to vertical movement. If you then turn the jog dial clockwise, the zoom frame will move down, and if you turn it counterclockwise, the zoom frame will move up.
  Move the zoom frame to the section of the image to be enlarged.






**5 Press camera select button 2 once more.**

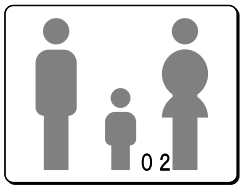
The image in the repositioned zoom frame will be enlarged.




**Note:** If you press the **STILL** button while the images are being zoomed, an enlarged still image will be displayed.

**6 To return an enlarged image to normal image display, press the ZOOM button once more.**

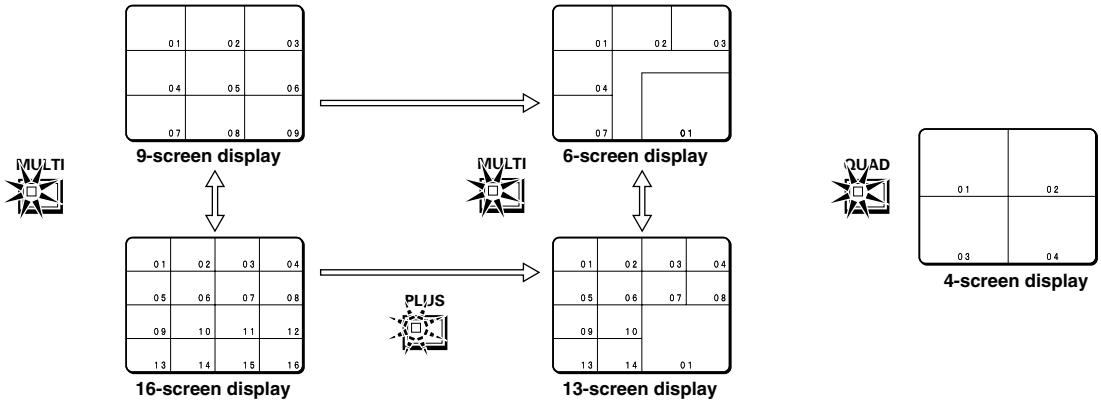
The zoom will be canceled and normal images will appear.



# VIEWING CAMERA IMAGES

## ■ Viewing multiple-screen images

Images from the cameras that are connected to the digital video recorder can be displayed in several split-screen formats. Furthermore, the images from each camera can be displayed in any position within the split screen. (See page 81.)



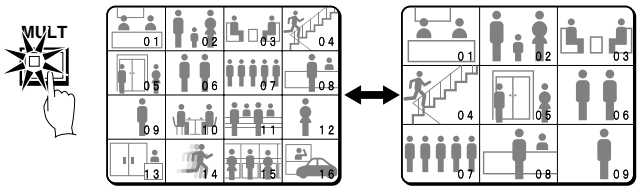

### Viewing images as 9-screen or 16-screen displays

**1** **Press the MULTI button.**

The display switches between 9-screen and 16-screen displays each time the **MULTI** button is pressed.

To return to a single-screen display, press a camera select button.

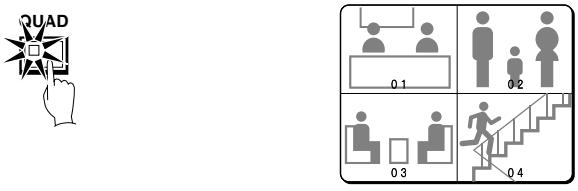
For the DSR-3009P model, only the 9-screen display is available with no switching.




### Viewing images as a 4-screen display

**1** **Press the QUAD button.**

Images appear as a 4-screen display.

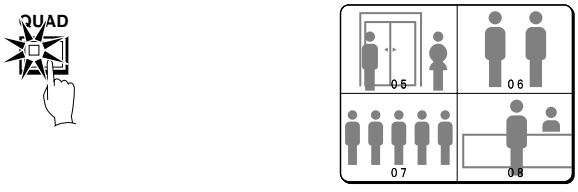



**2** **Press the QUAD button once more.**

Camera images are switched in 4-screen display units (1 – 4, 5 – 8, 9 – 12, 13 – 16) each time the button is pressed.

To return to a single-screen display, press a camera select button.

For the DSR-3009P model, a 4-screen display of images from cameras 1 – 4, 5 – 8, or 9 – 3 will appear each time the button is pressed.



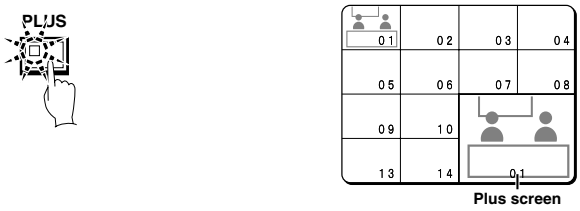

### Plus screen viewing

The plus screen allows you to display the images from each camera as a quarter-screen display in the lower right corner of the split-screen display. In addition, images being recorded can be played back in the same position.

**1** **Press the PLUS button.**

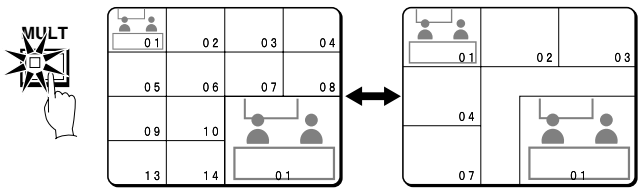
The display changes to show a 13-screen display with a plus screen as a quarter-screen picture in the lower-right corner.

For the DSR-3009P model, a 6-screen display appears.




**2** **Press the MULTI button.**

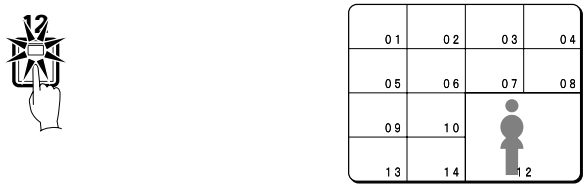
The display switches between 13-screen and 6-screen each time the **MULTI** button is pressed.




**3** **Press a camera select button (example: 12).**

The images from the selected camera will be displayed in the plus screen. To cancel the plus screen, press the **PLUS** button once more.

For the DSR-3009P model, press a camera select button numbered 9 or less.



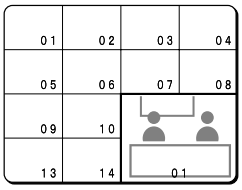
# VIEWING CAMERA IMAGES

### Example: To display images from camera 2 in the plus screen

Record the images on the hard disk beforehand. (See page 20.)

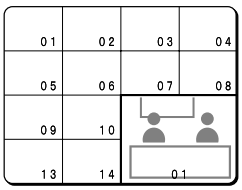
**1 Press the PLAY/STOP button.**

All screens will start playing back.



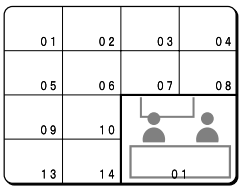

**2 Press the PLUS button.**

The plus screen is displayed.



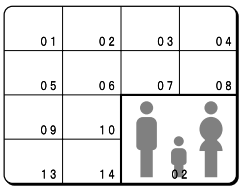

**3 Press the PLUS button once more.**

The plus screen continues to show the playback images, and the other split-screen displays show images in monitoring mode.




**4 Press camera select button 2.**

The plus screen changes to show the images being recorded by camera 2.

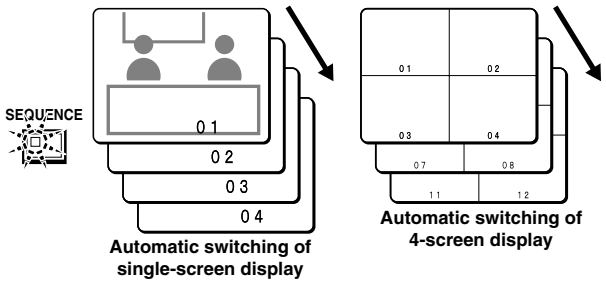



**Note:**

- See page 20, 24 for further details on recording and playback.
- To stop playback, press the **PLAY/STOP** button once more. The display returns to the plus screen.

## ■ Viewing automatically switching images

The camera images are switched automatically in the order that has been set using the SEQUENCE settings. (See page 82.)

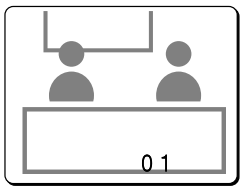



### Automatically switching of the single-screen images

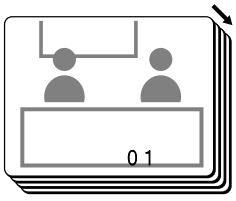
**1 Switch to single-screen display, and then press the camera select buttons to select the camera for automatic switching (example: 1).**

The camera select buttons for the cameras that were selected are stored in memory.

The indicator will illuminate when the next button is pressed.

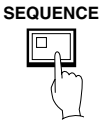



**2 Press the SEQUENCE button.**




**3 To cancel automatic switching, press the SEQUENCE button once more, or press one of the individual camera select buttons.**

Automatic switching will be canceled and normal images will appear.

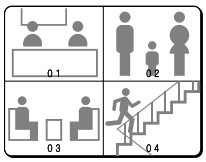


# VIEWING CAMERA IMAGES

## Automatically switching of the 4-screen images

**1 Press the QUAD button.**

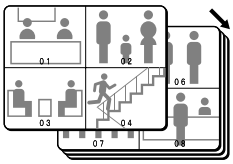
Images appear as a 4-screen display.



**2 Press the SEQUENCE button.**

Camera images will be switched automatically in 4-screen display units (1 – 4, 5 – 8, 9 – 12, 13 – 16).

For the DSR-3009P model, images from cameras 1 – 4, 5 – 8, or 9 – 3 will be switched automatically.



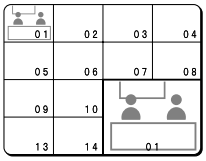
**3 Press the SEQUENCE button once more to return to the 4-screen display.**

Automatic switching will be canceled and 4-screen display will be restored.

## Automatically switching of the plus screen image

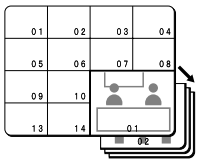
**1 Press the PLUS button.**

The plus screen is displayed.



**2 Press the SEQUENCE button.**

The camera images in the plus screen will be switched automatically.



**3 Press the SEQUENCE button once more to return to the plus screen.**

Automatic switching will be canceled and the plus screen will appear.

To cancel the plus screen, press the **PLUS** button once more.

# VIEWING CAMERA IMAGES

## ■ Using two monitors for monitoring

If you connect a monitor to the MON2 output terminal on the rear panel, you can display the images from each camera as single-screen images or show an automatic switching screen on monitor 2, even while the main monitor is showing a split-screen display. In addition, the camera images can be shown in a single-screen display during playback, and when an alarm occurs, the alarm camera images can be automatically sent to monitor 2. The default setting is automatic switching of a single screen.

### Operating monitor 2

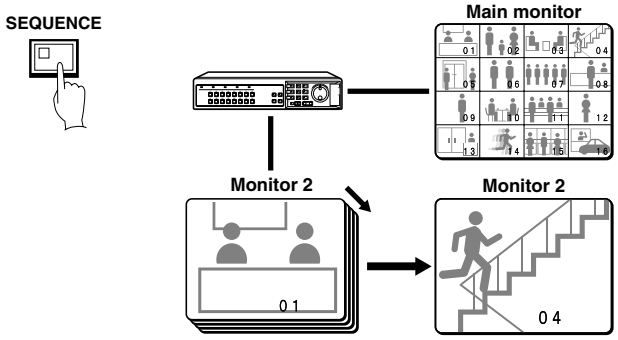
**Press the MON2 button.**

The MON2 indicator flashes.

### Displaying single-screen camera 4 images on monitor 2

**Press camera select button 4.**

The images from camera 4 appear on monitor 2 in a single-screen display.

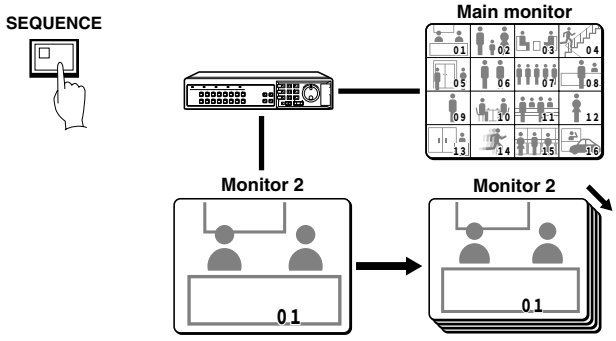



### Changing monitor 2 from single-screen display to automatic switching

**Press the SEQUENCE button.**

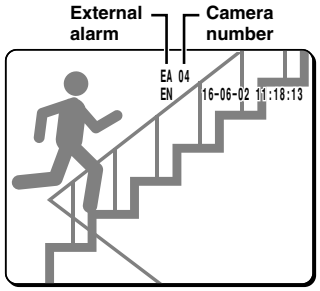
The camera images being displayed on monitor 2 will switch automatically.

To cancel automatic switching, press the **SEQUENCE** button once more.




### Displaying single-screen alarm images on monitor 2

When an alarm is received, the alarm images will be displayed on monitor 2 as single-screen images.



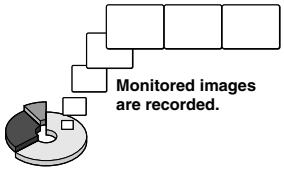

**Note:** If alarm images are being displayed on monitor 2, change the "**MON.2 DISPLAY**" setting in the (ALARM OPERATION SET) menu to "**ON**". (See page 66.)

### Canceling monitor 2 display

**Press the MON2 button once more.**

The MON2 indicator switches off.

# RECORDING IMAGES IN THE NORMAL RECORDING AREA



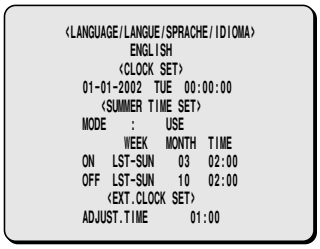

## ■ Normal recording

Images can be recorded in the normal recording area while they are being monitored.

If the time has not been set, the digital video recorder cannot make recordings. Be sure to set the time. (See page 44.)

**1 Setting the time**

Press the **MENU** button to display the LANGUAGE/CLOCK SET menu, and set the date and time. After the setting has been made, press the **EXIT/OSD** button, the date and time appear in the operating display. (See page 44.)

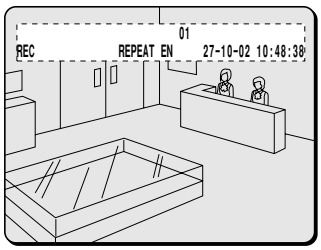



**Note:** If the "**PROGRAM REC SET**" setting is set in the menu screen, program recording of the images for each camera will be possible. (See page 55.)

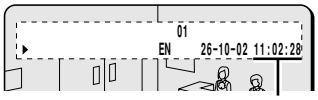
**2 Press the REC/STOP button.**

"**REC**" appears in the operating display and the images being monitored are recorded in the normal recording area. Recording onto the hard disk proceeds automatically (default setting) according to the following settings. The settings can be changed between long-period recording and high-quality recording in five steps. (See page 55.)

- Hard disk recording areas:
  Normal recording area: 80%
  Alarm recording area: 19%
  Archive area: 1%
- Picture quality: EN (Enhanced)
- Recording speed: 8.33 FPS (81H)




**Note:** Playback is possible during recording. When the **PLAY/STOP** button is pressed during recording, "▶" appears in the operating display and images are played back from the point where recording began.




**Recording start time**

**3 Press and hold the REC/STOP button for 3 seconds or more.**

The "**REC**" in the operating display disappears and recording stops.

**Green → Red**

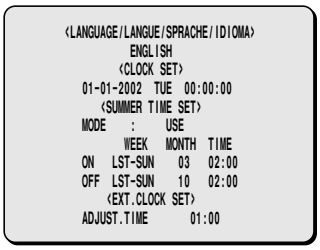
# RECORDING IMAGES IN THE NORMAL RECORDING AREA

## ■ Timer recording

The monitored images can be recorded automatically by setting start and end times for each day of the week.

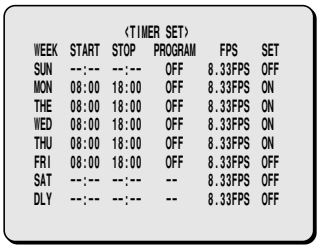
### 1 ① Setting the time

Press the **MENU** button to display the LANGUAGE/CLOCK SET menu, and set the date and time. After the setting has been made, press the **EXIT/OSD** button, the date and time appear in the operating display. (See page 44.)




### ② Set the timer.

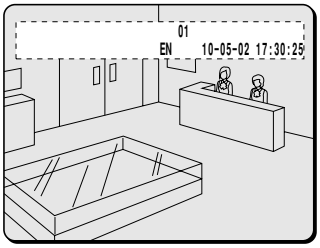
- Press the **MENU** button to display the TIMER SET menu, and then set the start and end times for timer recording. (See page 56.)
- Once the setting is complete, press the **EXIT/OSD** button to return to the normal screen.


〈TIMER SET〉
WEEK START STOP PROGRAM FPS SET
SUN --:-- --:-- OFF 8.33FPS OFF
MON 08:00 18:00 OFF 8.33FPS ON
THE 08:00 18:00 OFF 8.33FPS ON
WED 08:00 18:00 OFF 8.33FPS ON
THU 08:00 18:00 OFF 8.33FPS ON
FRI 08:00 18:00 OFF 8.33FPS OFF
SAT --:-- --:-- -- 8.33FPS OFF
DLY --:-- --:-- -- 8.33FPS OFF

**Note:** If the "**PROGRAM REC SET**" setting is set in the menu screen, program recording of the images for each camera will be possible. (See page 55.)

### 2 Press the TIMER button.

The TIMER indicator illuminates and the digital video recorder switches to timer recording standby mode.



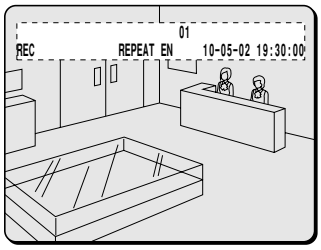

**Note:**

- If SET in the TIMER SET menu is not set to "**ON**", or if the timer settings are not made correctly, an alarm will sound when the **TIMER** button is pressed.
- The TIMER indicator illuminates when the timer setting has been made correctly.
- When the timer setting time is reached, the TIMER indicator and the REC indicator illuminate and timer recording starts.
- If you press the **TIMER** button during timer recording, the TIMER indicator and the REC indicator switch off and timer recording stops.

### 3 Timer recording starts when the timer setting time is reached.

"**REC**" appears in the operating display and the images being monitored are recorded in the normal recording area. Recording onto the hard disk proceeds automatically (default setting) according to the following settings. The settings can be changed between long-period recording and high-quality recording in five steps. (See page 54.)

- Hard disk recording areas:
  Normal recording area: 80%
  Alarm recording area: 19%
  Archive area: 1%
- Picture quality: EN (Enhanced)
- Recording speed: 8.33 FPS (81H)



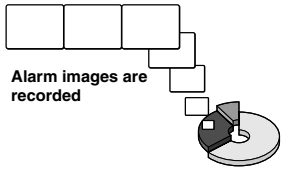

**Note:** Playback is possible during recording. When the **PLAY/STOP** button is pressed during recording, "▶" appears in the operating display and images are played back from the point where recording began.

### 4 Timer recording stops when the set end time is reached.

The TIMER indicator swithes off and the recording symbol (**REC**) disappears from the operating display and recording stops.

**Note:** Press the **TIMER** button to stop timer recording. Timer recording then stops.

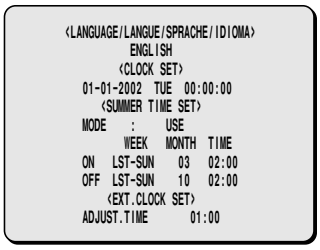
# RECORDING IMAGES IN THE ALARM RECORDING AREA




## ■ Alarm recording

### 1 ① Setting the time

Press the **MENU** button to display the LANGUAGE/CLOCK SET menu, and set the date and time. After the setting has been made, press the **EXIT/OSD** button, the date and time appear in the operating display. (See page 44.)



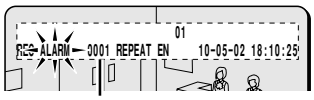

② **Set alarm recording.**

- Press the **MENU** button to display the ALARM REC MODE SET menu in the menu screen. Then change the ALARM RECORDING setting to the desired alarm recording setting (ENABLED, AL-REC ON TIMER, AL-REC OFF TIMER or OLY AL-RC ON TMR) and change the ALARM TRIGGER setting. (See page 59.)
- Press the **EXIT/OSD** button to return to the normal screen.

〈ALARM REC MODE SET〉
PICTURE QUALITY : SUPER FINE
AUDIO RECORDING : ON
ALARM RECORDING : ENABLED
ALARM INTERLEAVE : ONLY
PROGRAM GROUP : OFF
REC RATE: 0.1FPS, DURATION: 40SEC
PRE-ALARM RECORDING : ON
REC RATE: ### FPS, DURATION: ###
=> (01010 ALARMS CAN BE RECORDED )
ALARM TRIGGER : ALARM

### 2 Suspicious person detection

When an alarm occurs, "**ALARM**" appears in the operating display, the ALARM indicator flashes and alarm recording (**REC** symbol) starts. Alarm images are recorded in the alarm recording area. Furthermore, the number of alarms in the operating display is increased by one each time an alarm occurs.



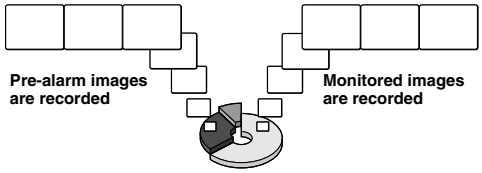

**The number of alarms is counted.**

**Note:** Normal recording and timer recording stop when an alarm occurs during normal recording or timer recording.

### 3 Ending alarm recording

After the end of the alarm duration period (default setting: 5 sec), the "**REC**" and "**ALARM**" displays stop flashing and recording stops.

# RECORDING IMAGES IN THE ALARM RECORDING AREA




## ■ Pre-alarm recording

**1 Setting the time**

Press the **MENU** button to display the LANGUAGE/CLOCK SET menu, and set the date and time. After the setting has been made, press the **EXIT/OSD** button, the date and time appear in the operating display. (See page 44.)

**2 Set pre-alarm recording.**

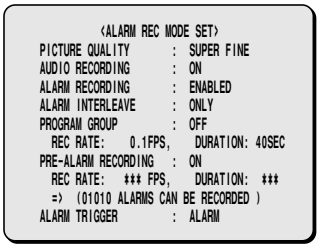
Press the **MENU** button to display the ALARM REC MODE SET menu. Set ALARM RECORDING to the desired alarm recording setting (example: ENABLED). The ✱✱✱ setting for PRE-ALARM RECORDING will be set to "**OFF**", so change it to "**ON**". (See page 62.)

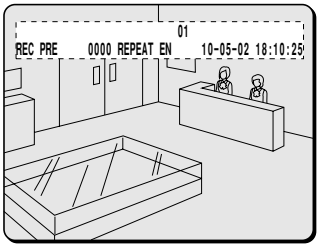
Press the **EXIT/OSD** button to return to the normal screen. "**PRE**" appears in the operating display, the ALARM indicator illuminates and pre-alarm recording starts (the **REC** mark does not appear).

The same monitored image as in the normal recording area is recorded repeatedly in the alarm recording area.

Recording onto the hard disk proceeds automatically (default setting) according to the following settings. The settings can be changed between long-period recording and high-quality recording in five steps. (See page 59.)

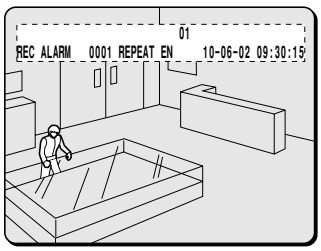
- Hard disk recording areas:
  Normal recording area: 80%
  Alarm recording area: 19%
  Archive area: 1%
- Picture quality: EN (Enhanced)
- Recording speed: 8.33 FPS (81H)


‹ALARM REC MODE SET›
PICTURE QUALITY : SUPER FINE
AUDIO RECORDING : ON
ALARM RECORDING : ENABLED
ALARM INTERLEAVE : ONLY
PROGRAM GROUP : OFF
REC RATE: 0.1FPS, DURATION: 40SEC
PRE-ALARM RECORDING : ON
REC RATE: ✱✱✱ FPS, DURATION: ✱✱✱
=› (01010 ALARMS CAN BE RECORDED )
ALARM TRIGGER : ALARM




**3 When an alarm is received, pre-alarm recording stops automatically and the alarm images are recorded.**

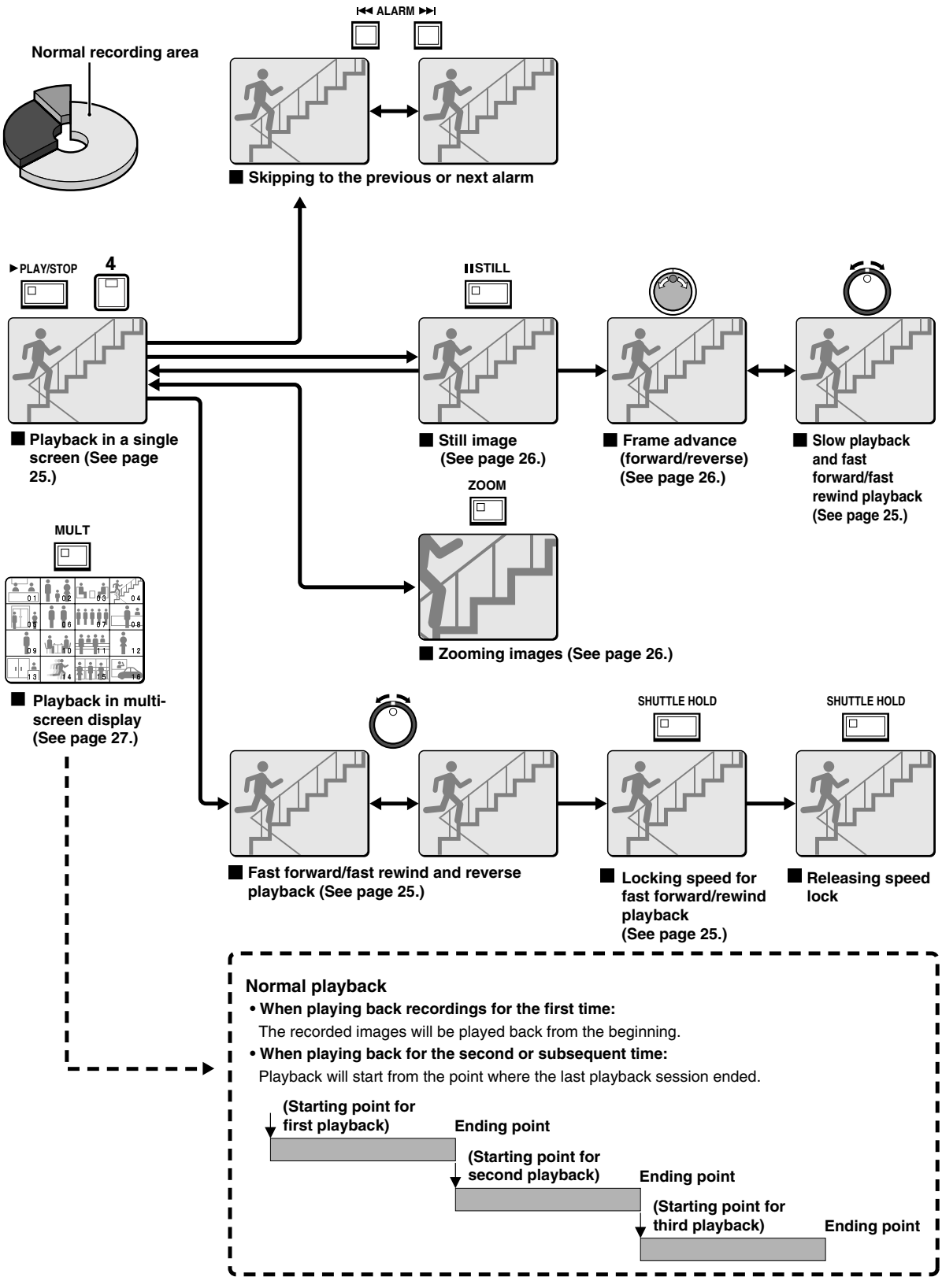
The "**PRE**" disappears from the operating display, "**ALARM**" flashes and the ALARM indicator flashes.



# PLAYING BACK RECORDED IMAGES

The digital video recorder can play back recorded images in the normal recording area (normal recording, timer recording).

## ■ Playback operations


Normal recording area
⏮ ALARM ⏭
■ Skipping to the previous or next alarm
►PLAY/STOP
4
■ Playback in a single screen (See page 25.)
❚❚STILL
■ Still image (See page 26.)
■ Frame advance (forward/reverse) (See page 26.)
■ Slow playback and fast forward/fast rewind playback (See page 25.)
ZOOM
■ Zooming images (See page 26.)
MULT
■ Playback in multi-screen display (See page 27.)
SHUTTLE HOLD
SHUTTLE HOLD
■ Fast forward/fast rewind and reverse playback (See page 25.)
■ Locking speed for fast forward/rewind playback (See page 25.)
■ Releasing speed lock
Normal playback
• When playing back recordings for the first time:
The recorded images will be played back from the beginning.
• When playing back for the second or subsequent time:
Playback will start from the point where the last playback session ended.
(Starting point for first playback)
Ending point
(Starting point for second playback)
Ending point
(Starting point for third playback)
Ending point

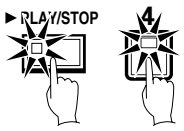
# PLAYING BACK RECORDED IMAGES

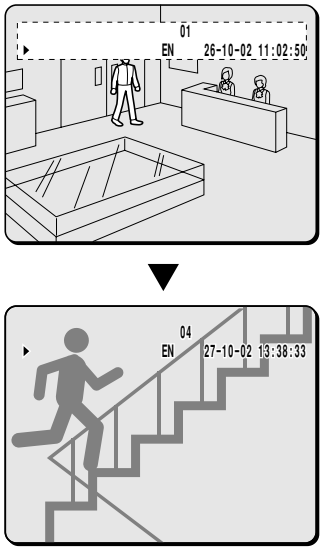
## ■ Playback in a single screen

**1** **Press the PLAY/STOP button.**

► appears in the operating display and the images recorded in the normal recording area are played back.

You can press the camera select buttons to select the camera images to be played back.



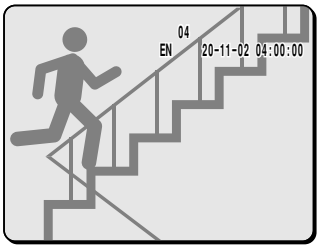




**Note:**

- Image playback starts from the point (time) that the recording started.
  If there is no starting position, or if a reset has been made, the oldest recorded image is played back.
- When playback is finished, playback mode is automatically paused. The pause (❚❚) symbol appears in the operating display and the STILL indicator illuminates.
- If playback has been carried out at least once, playback will start from the position where the last playback session ended.

**2** **Press the PLAY/STOP button again.**

Playback stops.



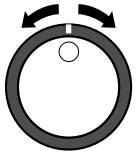

**Note:** If playback is started just as recording is being carried out, recording will have priority, so that the playback images may be paused momentarily.

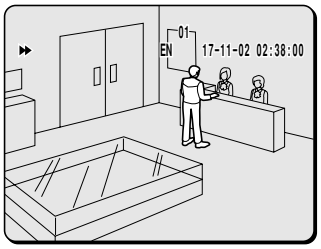
### Fast forward/fast rewind and reverse playback

**1** **Turn the shuttle dial clockwise (or counterclockwise) during playback.**

When the shuttle dial is turned clockwise, ►► appears in the operating display and fast forward playback starts. If it is turned counterclockwise, ◄◄ appears in the operating display and rewind playback starts.

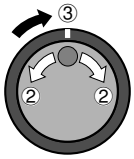
When you release the shuttle dial, normal playback resumes.






**2** **Changing the playback speed**

**(Fast forward/slow playback)**

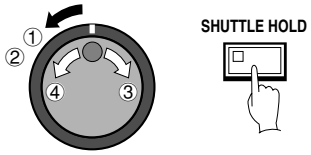



① Turn the jog dial clockwise.
Fast forward playback starts and ►► appears in the operating display.

② Turn the jog dial counterclockwise.
Slow playback starts and ❚❚► appears in the operating display.

③ Return to normal playback.
Turn the jog dial clockwise. ► appears in the operating display.

**(Fast rewind playback)**




① Turn the shuttle dial counterclockwise slightly (fix at fast rewind)
◄ will be displayed, so press the **SHUTTLE HOLD** button. The SHUTTLE HOLD indicator will illuminate and the rewind playback speed will be fixed at the current speed.

② Turn the shuttle dial counterclockwise again.
The speed becomes faster than for normal rewind playback, and ◄◄ appears in the operating display.

③ Turn the jog dial clockwise.
►► appears in the operating display.

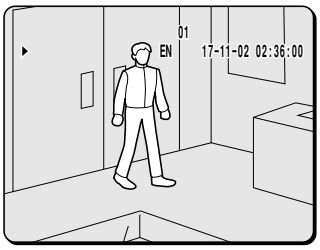
④ Return to normal playback.
Turn the jog dial counterclockwise. ► appears in the operating display.

# PLAYING BACK RECORDED IMAGES

## Zooming the image during playback

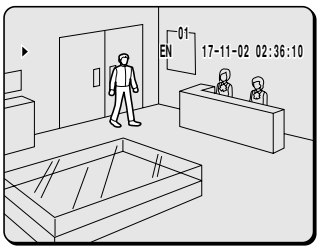
**1 Press the ZOOM button during playback.**

The images will be enlarged.




**2 To return an enlarged image to normal image display, press the ZOOM button once more.**

The zoom will be canceled and normal images will appear.

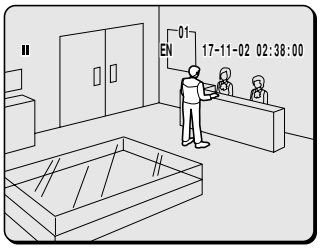



**Note:** You can also change the zoom position. For details on this operation, refer to "**Enlarging images**" (See page 15).

## Viewing still images

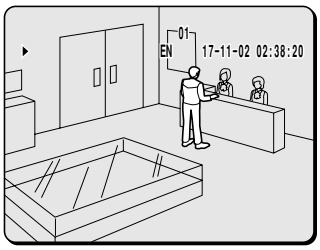
**1 Press the STILL button during playback.**

❚❚ appears in the operating display and a still image is displayed.




**2 Press the STILL button once more.**

Still mode is canceled.

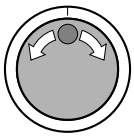


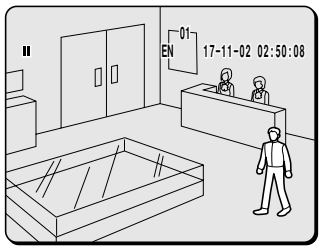

## Frame advance (forward/reverse)

**1 Turn the jog dial clockwise (or counterclockwise) in still mode.**

Turn the jog dial clockwise to advance the still image by one frame (one field).

Turn it counterclockwise to rewind the still image by one frame (one field).






**Note:** If the jog dial is turned quickly, the frame feed speed also increases. However, if the speed is too fast, the images will stop. Play back the images at an appropriate speed.

During the following operations the picture may appear distorted or momentarily frozen. This is normal and not a malfunction.

- During the continuous playback from the normal and the alarm recording area, the picture may be distorted when the recording area is switched.
- When playing back during an alarm recording, during continuous playback from the normal and alarm recording area, during normal playback or when using the fast forward/rewind playback the picture may appear momentarily frozen.

# PLAYING BACK RECORDED IMAGES

## ■ Playing back multiple-screen displays

Recorded images can be playback in several split-screen formats. Furthermore, the images from each camera can be displayed in any position within the split-screen. (See page 81.)

**1 Press the PLAY/STOP button.**

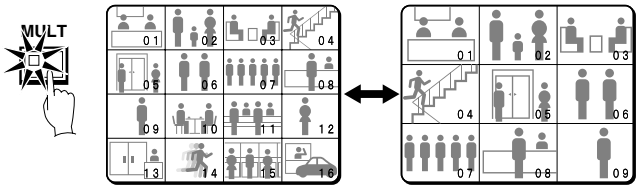
### Playing back images as 9-screen or 16-screen displays

**1 Press the MULTI button.**

The display switches between 9-screen and 16-screen each time the **MULTI** button is pressed.

To return to a single-screen display, press a camera select button.

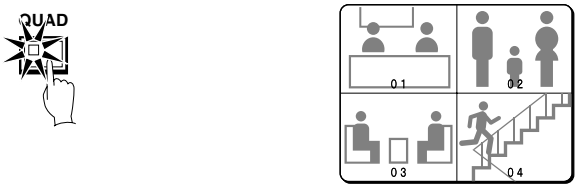
For the DSR-3009P model, only the 9-screen display is available with no switching.




### Playing back images as a 4-screen display

**1 Press the QUAD button.**

Images appear as a 4-screen display.

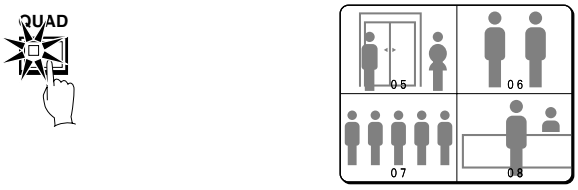



**2 Press the QUAD button once more.**

Camera images are switched in 4-screen display units (1 – 4, 5 – 8, 9 – 12, 13 – 16) each time the button is pressed.

To return to a single-screen display, press a camera select button.

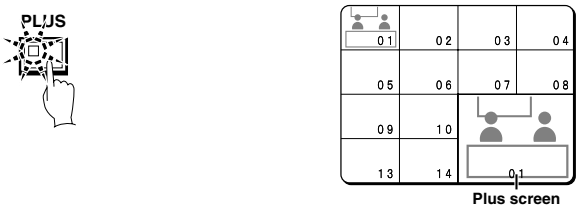
For the DSR-3009P model, a 4-screen display of images from cameras 1 – 4, 5 – 8, or 9 – 3 will appear each time the button is pressed.




### Playing back images as 13-screen or 6-screen displays (plus screen)

**1 Press the PLUS button.**

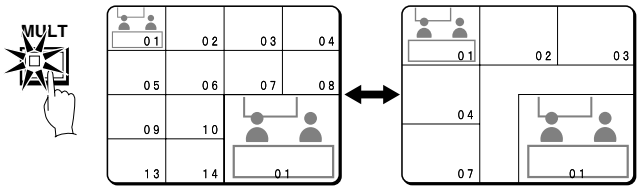
The display changes to show a 13-screen or 6-screen display with a plus screen as a quarter-screen picture in the lower-right corner.




**2 Press the MULTI button.**

The display switches between 13-screen and 6-screen each time the **MULTI** button is pressed.

For the DSR-3009P model, only the 6-screen display is available with no switching.

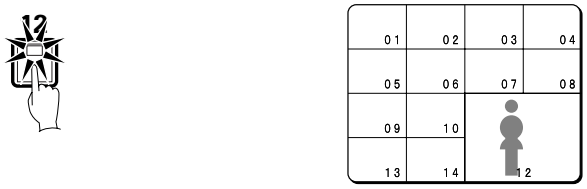



**3 Press a camera select button (example: 12).**

The playing back images from the selected camera will be displayed in the plus screen.

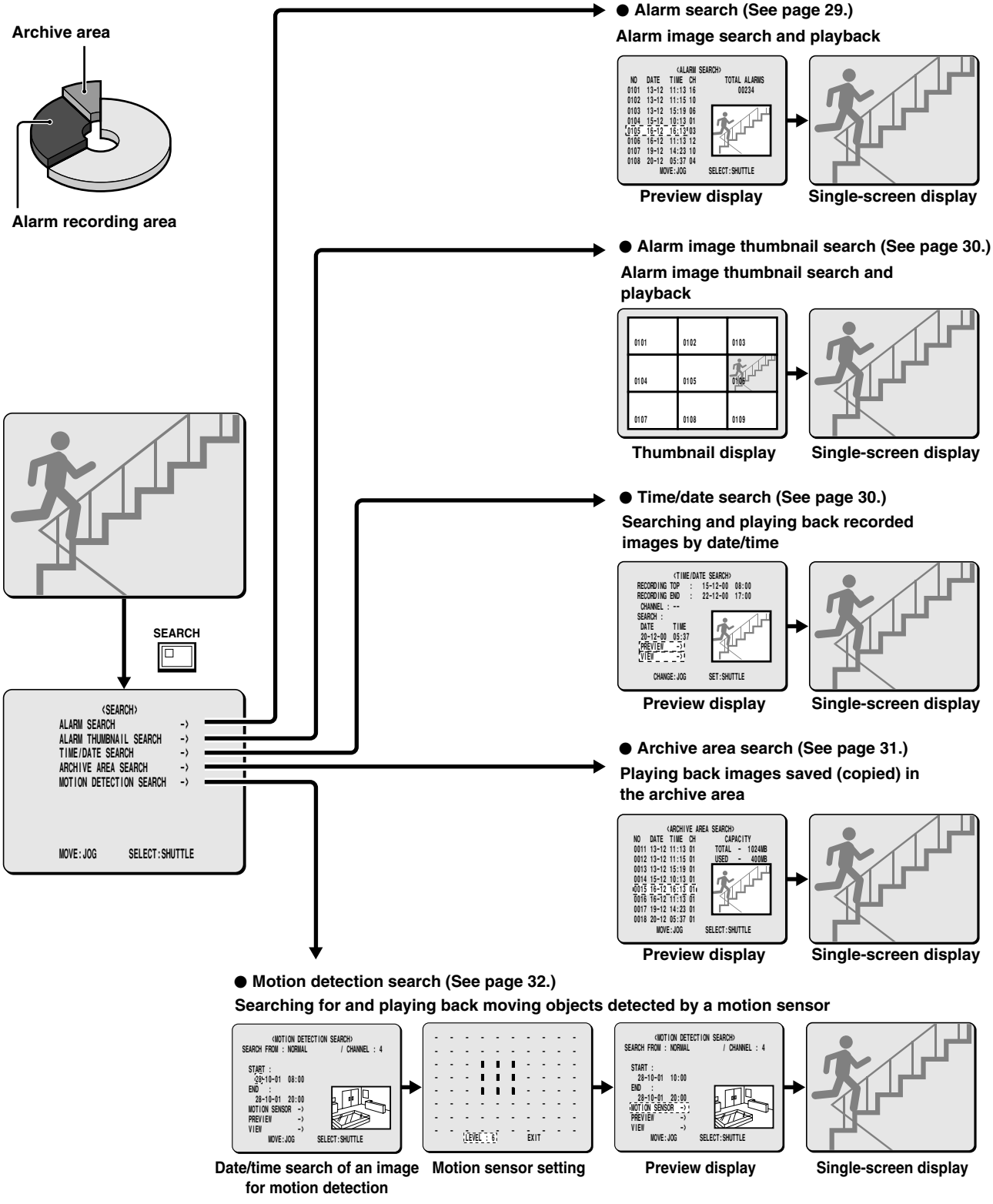
To cancel the plus screen, press the **PLUS** button once more.

For the DSR-3009P model, press camera select button 9.



# SEARCHING FOR RECORDED IMAGES

Images that have been recorded in the alarm recording area and in the archive area can be played back. Furthermore, images can also be searched for by recording date and time, and you can also search for moving objects that have been detected by a motion sensor during image playback.


Archive area
Alarm recording area
SEARCH
〈SEARCH〉
ALARM SEARCH ->
ALARM THUMBNAIL SEARCH ->
TIME/DATE SEARCH ->
ARCHIVE AREA SEARCH ->
MOTION DETECTION SEARCH ->
MOVE:JOG SELECT:SHUTTLE
● Alarm search (See page 29.)
Alarm image search and playback
Preview display
Single-screen display
● Alarm image thumbnail search (See page 30.)
Alarm image thumbnail search and playback
Thumbnail display
Single-screen display
● Time/date search (See page 30.)
Searching and playing back recorded images by date/time
Preview display
Single-screen display
● Archive area search (See page 31.)
Playing back images saved (copied) in the archive area
Preview display
Single-screen display
● Motion detection search (See page 32.)
Searching for and playing back moving objects detected by a motion sensor
Date/time search of an image for motion detection
Motion sensor setting
Preview display
Single-screen display

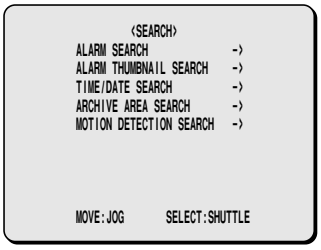
# SEARCHING FOR RECORDED IMAGES

## Alarm search

All alarm recording images in the alarm recording area can be searched for and played back. If pre-alarm images have is recorded, the images immediately before the alarms can also be played back.

**1 Press the SEARCH button during recording or when the digital video recorder is stopped.**

The SEARCH screen appears.




**2 Use the jog dial to select ALARM SEARCH and then turn the shuttle dial clockwise.**

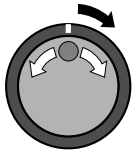
The ALARM SEARCH screen appears.

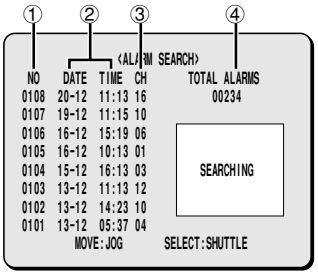
① **NO:** Alarm number appears.

② **DATE/TIME:** The date and time that the alarm was received and the images were recorded appears.

③ **CH:** The channel (camera number) which received the alarm appears.

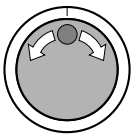
④ **TOTAL ALARMS:** The total number of alarm images recorded appears.

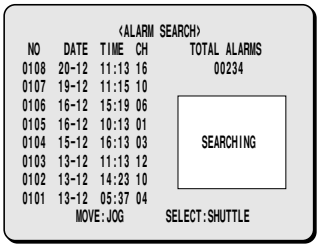





**3 Use the jog dial to move the cursor in order to select the images to be played back.**

The selected alarm image appears in the preview screen.



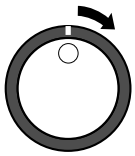


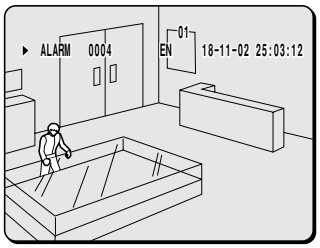

**Note:**

- Up to eight items of alarm information can be displayed on the ALARM SEARCH screen. When the jog dial is turned, the previous or next alarm information screen appears.
- To end this search mode, press the **SEARCH** button.

**4 Turn the shuttle dial clockwise.**

The preview image appears in a single-screen display and playback starts.





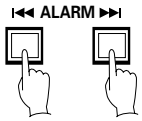

**Note:**

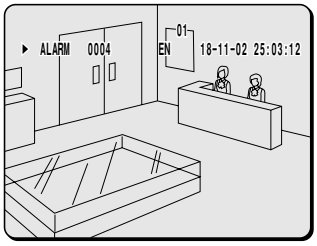
- You can also use the shuttle dial or jog dial to carry out operations such as pausing and fast-forward playback.
- To listen to the sound, change to either a 4-screen or 16-screen (9-screen) split-screen display.
- Alarm search starts playback from the image that was recorded at the instant the alarm occurred, so if you are viewing pre-alarm images, use the shuttle operations to carry out rewind playback.
- Alarm search only plays back alarm images for a single event. When playback of the event is complete, playback stops. If you would like to play back the next alarm, press an **ALARM** button.

## Alarm search 2

**1 Press an ALARM button during playback.**

- If you press the ⏮ button, playback skips to the previous alarm image.
- If you press the ⏭ button, playback skips to the next alarm image.



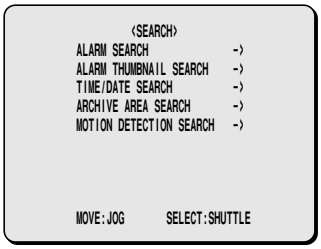

**Note:** When playing back images using alarm search, the playback will pause at the start and at the end of each alarm recording. Use the **ALARM** buttons to play back previous and subsequent alarm recordings.

# SEARCHING FOR RECORDED IMAGES

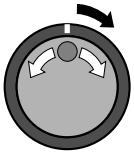
## Alarm thumbnail search

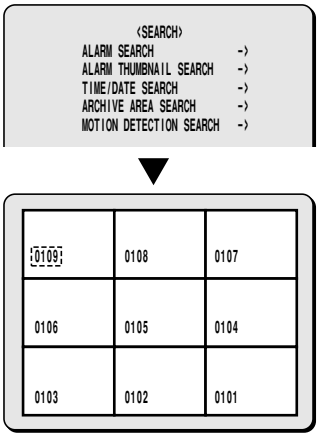
Alarm images can be searched for and played back from thumbnails.
All alarm images recorded in the alarm recording area are displayed as thumbnails.

**1 Press the SEARCH button during recording or when the digital video recorder is stopped.**
The SEARCH screen appears.

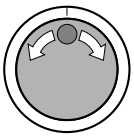


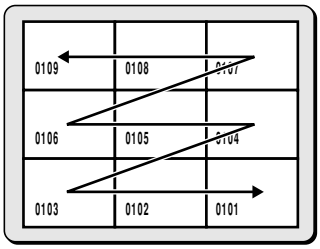

**2 Use the jog dial to select ALARM THUMBNAIL SEARCH and then turn the shuttle dial clockwise.**
The last nine alarm recording images recorded appear.
The alarm number appears with each alarm recording image, and the alarm number of the currently-selected alarm image flashes.






**3 Use the jog dial to move the cursor in order to select the images to be played back.**
The alarm number of the currently-selected alarm image flashes.

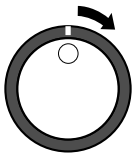


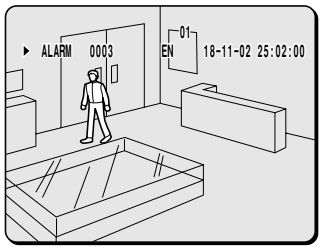



**Note:**

- Up to nine items of alarm information including thumbnails can be displayed. When the jog dial is turned, the previous or next alarm information screen appears.
- To end this search mode, press the **SEARCH** button.

**4 Turn the shuttle dial clockwise.**
The selected image appears in a single-screen display and playback starts.





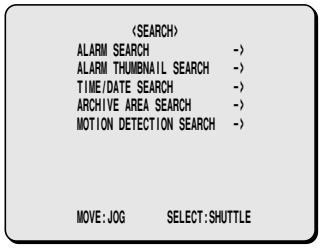

**Note:**

- You can also use the shuttle dial or jog dial to carry out operations such as pausing and fast-forward playback.
- Only the contents of each alarm can be played back, in the same way as for alarm searching. Use the ALARM buttons to play back previous and subsequent alarm recordings.

## Time/date search

The recording date and time for images in the normal recording area (normal recording and timer recording images) and in the alarm recording area of the hard disk can be specified and the images can be played back.

**1 Press the SEARCH button during recording or when the digital video recorder is stopped.**
The SEARCH screen appears.



# SEARCHING FOR RECORDED IMAGES

**2 Use the jog dial to select TIME/DATE SEARCH and then turn the shuttle dial clockwise.**

The TIME/DATE SEARCH screen appears.

① **RECORDING TOP:** The date and time of the first recorded image is displayed.

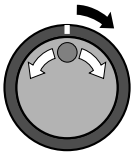
② **RECORDING END:** The date and time of the latest (most recently) recorded image is displayed.

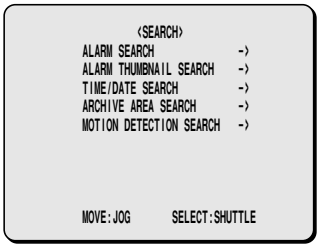
③ **CHANNEL:** Enter the desired channel (camera number) to be played back.

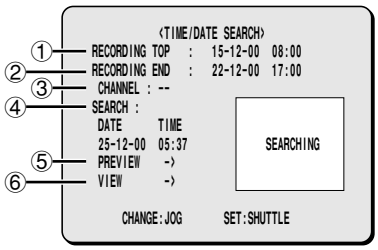
④ **SEARCH:** Enter the date and time to be displayed in this area.

⑤ **PREVIEW:** A preview image appears.

⑥ **VIEW:** The selected image appears on the monitor as a single-screen image.






**3 Example: To search for 8 pm on 26 October 2001**

① Use the jog dial to change the "**CHANNEL**" setting to "**5**", and then turn the shuttle dial clockwise.

② Turn the shuttle dial clockwise, and then use the jog dial to change "**25**" to "**26**".

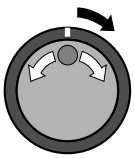
③ Turn the jog dial clockwise and select "**10**".

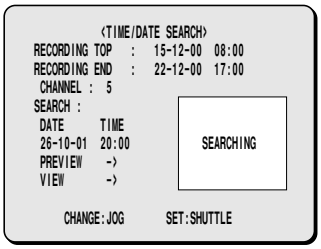
④ Turn the shuttle dial clockwise and select "**01**".

⑤ Turn the shuttle dial clockwise, and then use the jog dial to change "**08**" to "**20**".

⑥ Turn the shuttle dial clockwise and select "**00**". Then turn the shuttle dial.

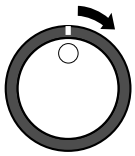
The cursor moves to PREVIEW.

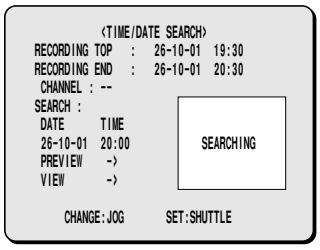





**4 Turn the shuttle dial clockwise.**

A search display appears while searching is in progress, and then a preview screen showing the date and time entered appears.

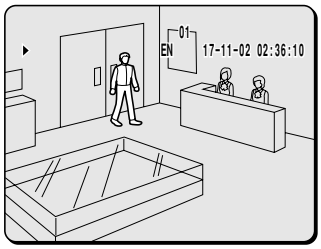





**Note:** If there are no images that match the time exactly, the image closest to the selected time range is displayed.

**5 Use the jog dial to select VIEW, and then turn the shuttle dial clockwise.**

The preview image is displayed and played back in a single-screen.




**Note:**

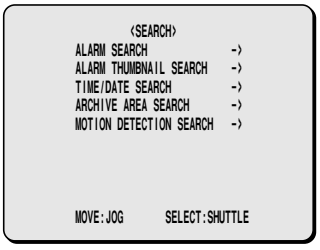
- A single-screen image can be displayed when date and time are entered and VIEW is selected, even without displaying a preview.
- You can also use the shuttle dial or jog dial to carry out operations such as pausing and fast-forward playback.

## Archive area search

You can play back images that have been saved (copied) in the archive area.

**1 Press the SEARCH button during recording or when the digital video recorder is stopped.**

The SEARCH screen appears.



# SEARCHING FOR RECORDED IMAGES

**2 Use the jog dial to select ARCHIVE AREA SEARCH and then turn the shuttle dial clockwise.**

The ARCHIVE AREA SEARCH screen appears.

① **NO:** The archive number is displayed.

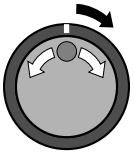
② **DATE:** The date of the recorded image is displayed.

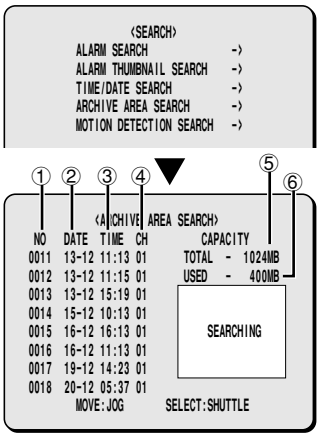
③ **TIME:** The start time of the recorded image is displayed.

④ **CH:** The channel (camera number) for the stored images appears.

⑤ **TOTAL:** The total capacity of the archive area is displayed.

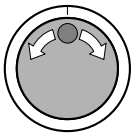
⑥ **USED:** The recorded part of the archive area is displayed.

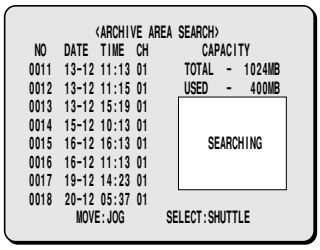





**3 Use the jog dial to move the cursor in order to select the images to be played back.**

The selected alarm image appears in the preview screen.





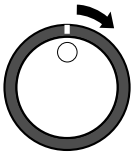

**Note:**

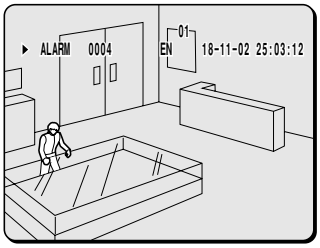
- Up to eight items of information can be displayed in the ARCHIVE AREA SEARCH screen.

  When the jog dial is turned, the previous or next archive screen appears.
- To end this search mode, press the **SEARCH** button.

**4 Turn the shuttle dial clockwise.**

The selected image appears in a single-screen display and playback starts.






**Note:** You can also use the shuttle dial or jog dial to carry out operations such as pausing and fast-forward playback.

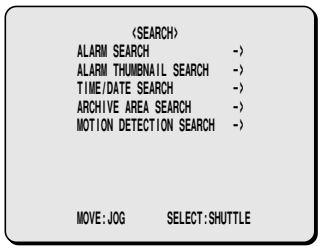
## Motion detection search

When a motion sensor is set for images recorded in the normal recording area (normal recording and timer recording images) or for images recorded in the alarm recording area of the hard disk, you can search for images that have changed because of the entry of a suspicious person, for instance, and play back only those images.

**Note:** Specify the camera number (channel) to detect only the images from that camera.

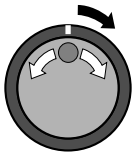
**1 Press the SEARCH button during recording or when the digital video recorder is stopped.**

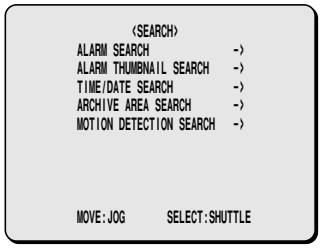
The SEARCH screen appears.




**2 Use the jog dial to select MOTION DETECTION SEARCH and then turn the shuttle dial clockwise.**

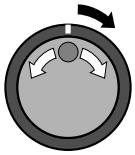
The MOTION DETECTION SEARCH screen appears.

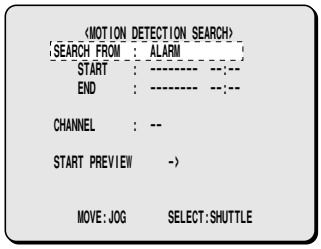





**3 Use the jog dial to select SEARCH FROM and then turn the shuttle dial clockwise.**

The ALARM display flashes.

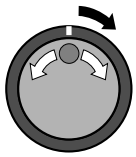


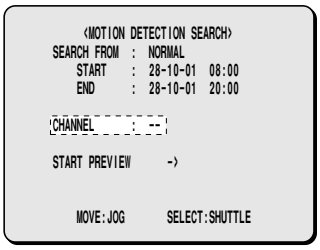


# SEARCHING FOR RECORDED IMAGES

**4 Use the jog dial to select the area to search (example: NORMAL), and then turn the shuttle dial clockwise.**

The cursor moves to CHANNEL.





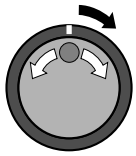

**Note:** If the setting for MULTIPLEXER in the VIDEO INPUT SET menu is set to "**NO USE**", the cursor will move to START PREVIEW.

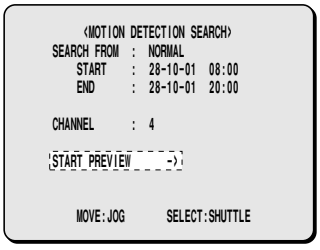
**Examples of recording area selection:**

- **ALARM:** Only images in the alarm recording area are searched.
- **NORMAL:** Only images in the normal recording area are searched.
- **ALARM & NORMAL:** Images in both the alarm recording area and the normal recording area are searched.

**5 Turn the shuttle dial clockwise, use the jog dial to select the camera number (example: 4), and then turn the shuttle dial clockwise.**

The cursor moves to START PREVIEW.






**6 Turn the shuttle dial clockwise.**

The screen changes and the preview screen for camera number 4 appears.

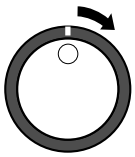
① **START:** The date and time for the first image in the selected recording area appears.
You can also select the screen which has a motion sensor set.

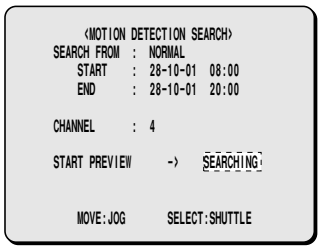
② **END:** The date and time for the last image in the selected recording area appears.
One hour is added to the time that is displayed.
You can also select the screen which has a motion sensor set.

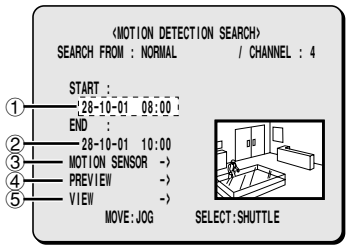
③ **MOTION SENSOR:** The motion sensor appears.

④ **PREVIEW:** The selected start point appears.
If you turn the shuttle dial clockwise, you can check the images up until the end point.

⑤ **VIEW:** The selected image appears on the monitor as a single-screen image in a normal screen.



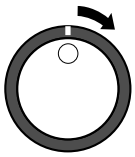


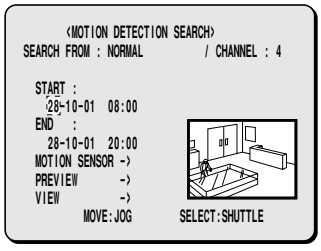



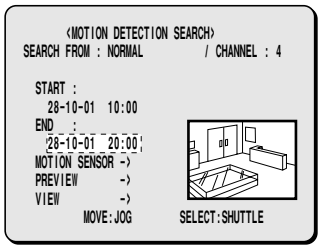

**7 Turn the shuttle dial clockwise.**

Use the jog dial to set the START date and time (example: 10.00 am on the current day) for the motion sensor setting, and then turn the shuttle dial clockwise.

The image for the specified time appears in the preview screen, and the cursor moves to the END date and time setting location.





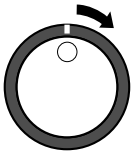



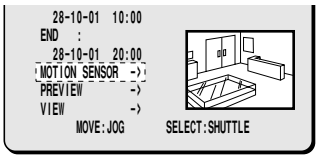
# SEARCHING FOR RECORDED IMAGES

**8 Turn the shuttle dial clockwise.**

Use the jog dial to set the END date and time (example: 8.00 pm on the current day) for the motion sensor setting, and then turn the shuttle dial clockwise.

The cursor moves to MOTION SENSOR.



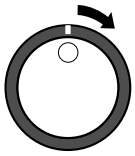


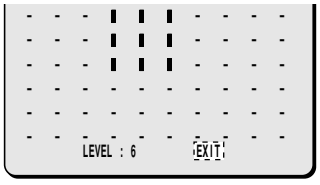

**9 Turn the shuttle dial clockwise.**

The motion sensor setting screen appears.

Set the motion sensor to cover the area where you would like movement to be observed.

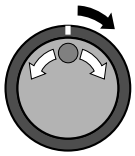
Move the cursor to EXIT and turn the shuttle dial clockwise. The display returns to the MOTION DETECTION SEARCH screen. Refer to page 67 for details on motion sensor settings.

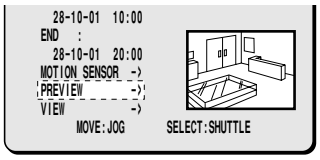





**10 Use the jog dial to move the cursor to PREVIEW.**

The screen showing the motion sensor settings appear in the preview screen each time the shuttle dial is turned.

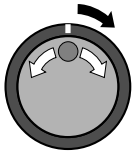





**Note:** If no motion sensor settings have been made, "**NOT FOUND**" appears, so make sure that the motion sensor settings have been made correctly.

**11 To view a motion sensor setting in a single-screen display, use the jog dial to move the cursor to VIEW and then turn the shuttle dial clockwise.**

The display changes from the specified image to normal playback.

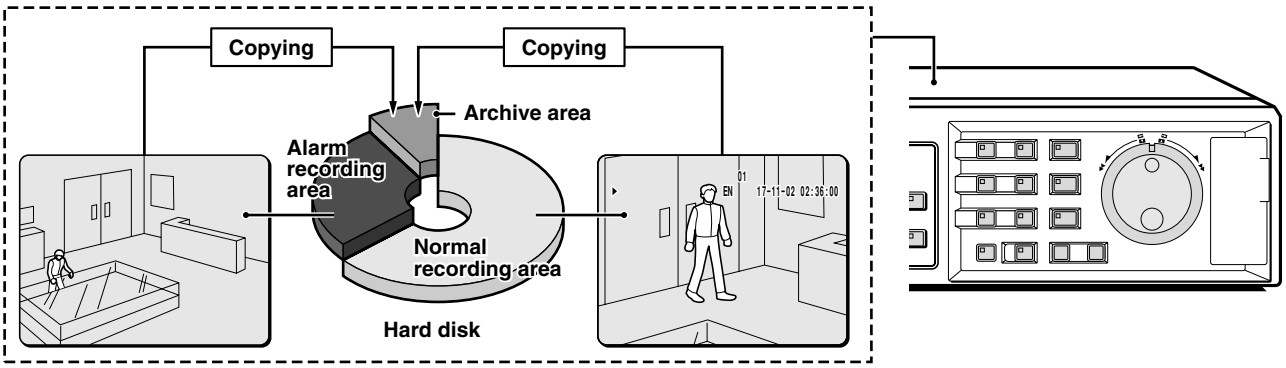


**Note:** If the camera number has been specified as a channel when carrying out motion detector searches, only images for the specified camera number will be played back. Furthermore, the digital video recorder title information and date information may not be fully displayed at this time in some cases. To play back the images from all cameras, the playback has first to be switched off and then switched back on again.

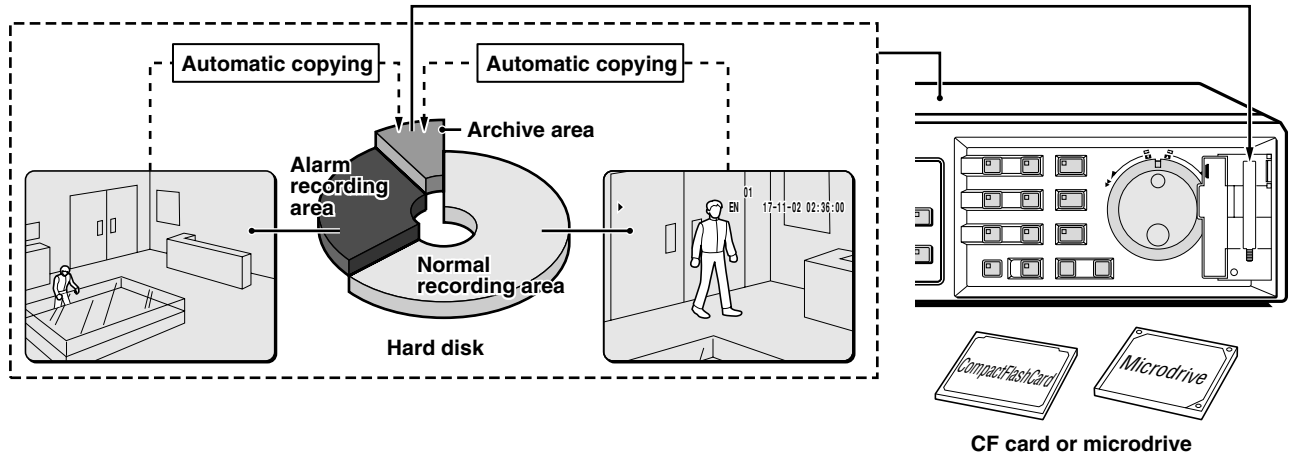
# SAVING (COPYING) RECORDED IMAGES

Important images that have been recorded onto the normal recording area or alarm recording area can be copied to the archive area of the hard disk or to the following media.

## A Copying images to the hard disk archive area

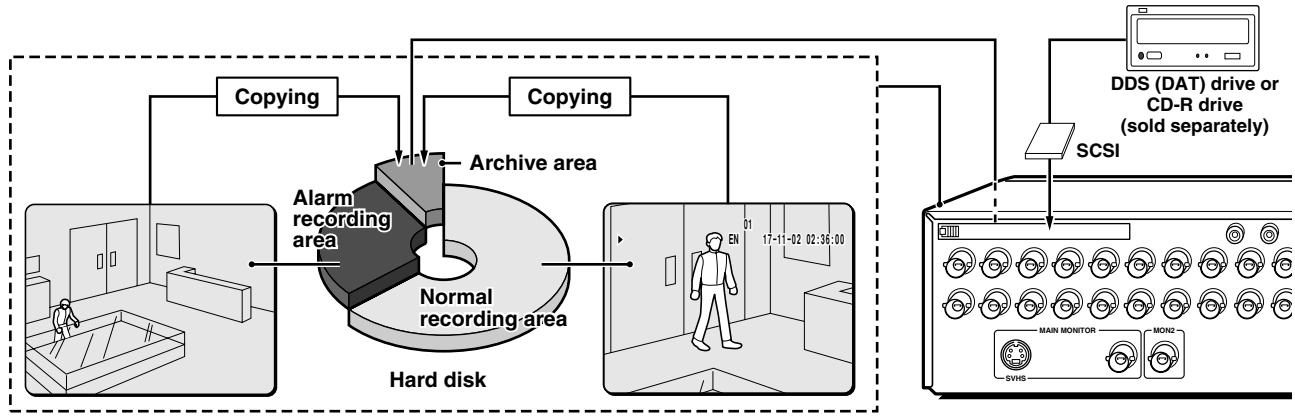



## B Copying images from the archive area to a CompactFlash card or microdrive




CF card or microdrive

## C Copying images from the archive area to a DDS (DAT) drive or CD-R drive



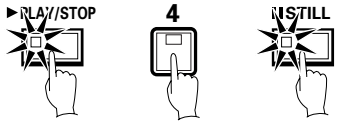

**Note:**

- Copied images are stored as a single picture.
- If you are downloading images to a CompactFlash card, the images are automatically saved in the archive area, and they are then copied from the archive area to the CompactFlash card. The images will no longer remain in the archive area.
- If the archive area has become full, use the ARCHIVE AREA FULL RESET setting in the RECORDING AREA SET menu to delete unneeded images.

# SAVING (COPYING) RECORDED IMAGES

## A Copying images to the hard disk archive area

**1** Play back the images in the normal recording area or alarm recording area that is to be copied, and pause playback at the image that is to be copied. (See page 26.)

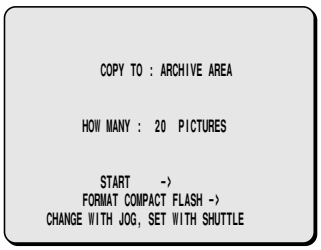



**Note:** Images from all cameras (1 to 16) cannot be copied all at once. Be sure to use the camera select buttons to select the camera images to be copied and played back.

**Example: To copy 10 seconds of images starting from a selected image**

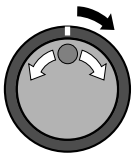
**2** **While the image to be copied is displayed as a still image, press the COPY button.**

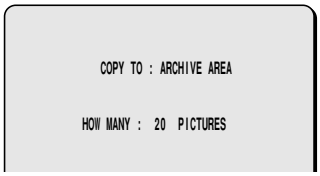
The copy screen appears.




**3** **Use the jog dial to select COPY TO and then turn the shuttle dial clockwise.**

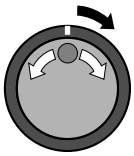
The ARCHIVE AREA display flashes.

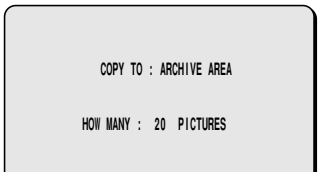




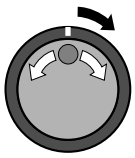

**4** **Use the jog dial to select ARCHIVE AREA and then turn the shuttle dial clockwise.**

The cursor moves to HOW MANY.





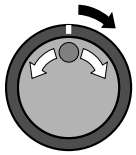

**5** **Turn the shuttle dial clockwise, use the jog dial to change the setting to "10", and then turn the shuttle dial clockwise.**

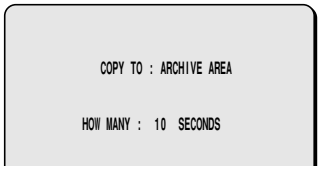


**6** **Use the jog dial to select the SECONDS setting, and then turn the shuttle dial clockwise.**

- **PICTURES:** Specify the number of images to be copied.
- **SECONDS:** Specify the number of seconds of images to be copied.
- **MINUTES:** Specify the number of minutes of images to be copied.

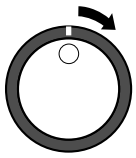
The cursor moves to START.

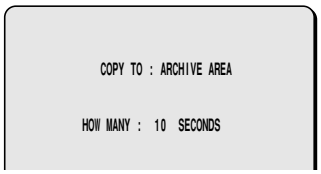





**7** **Turn the shuttle dial clockwise.**

Copying of images to the archive area starts. When copying is complete, "**COPY FINISHED**" appears.






**Note:** If you press the **COPY** button while copying is in progress, copying is canceled.

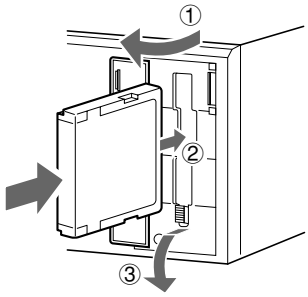
# SAVING (COPYING) RECORDED IMAGES

## B Copying images from the archive area to a CompactFlash card or microdrive

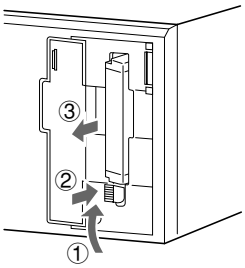
**Insert a CompactFlash card or microdrive into the CompactFlash slot on the front panel.**

When inserting the CompactFlash card or microdrive, make sure that the direction of insertion is correct.

**(Inserting)**



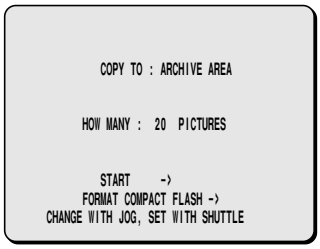

**(Removing)**




**1 Display an image from the archive area as a still image, and then press the COPY button.**

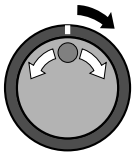
The copying screen appears.

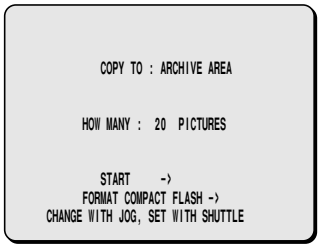
Refer to page 31 for details on playing back images from the archive area.




**2 Use the jog dial to select COPY TO and then turn the shuttle dial clockwise.**

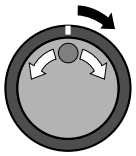
The ARCHIVE AREA display flashes.

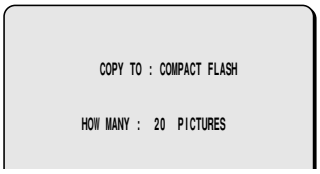





**3 Use the jog dial to select COMPACIT FLASH and then turn the shuttle dial clockwise.**

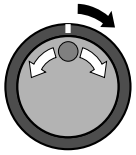
The cursor moves to HOW MANY.

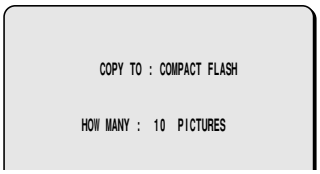





**4 Turn the shuttle dial clockwise, use the jog dial to change the setting to "10", and then turn the shuttle dial clockwise.**

The cursor moves to PICTURES.

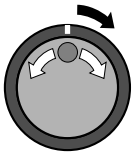


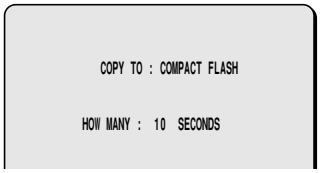


**5 Use the jog dial to select the SECONDS setting, and then turn the shuttle dial clockwise.**

The cursor moves to START.

- **PICTURES:** Specify the number of images to be copied.
- **SECONDS:** Specify the number of seconds of images to be copied.
- **MINUTES:** Specify the number of minutes of images to be copied.





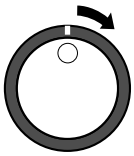

**Note:**

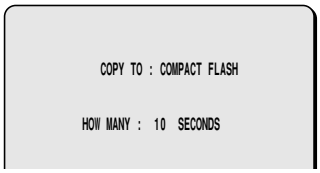
- The limit to the number of images that can be copied is 40000. Copying ends when 40000 images have been copied.
- When copying alarm recordings, they can only be copied one at a time.

**6 Turn the shuttle dial clockwise.**

The COPY indicator illuminates, the COPY TO : COMPACT FLASH screen appears and copying of images to the CompactFlash card starts.

When copying is complete, "**COPYING COMPLETE**" appears.



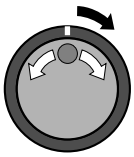


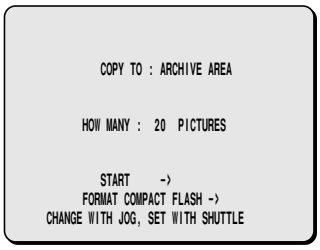

**Note:**

- If copying images directly from the normal recording area or alarm recording area to a CompactFlash card, the same images will also be copied to the archive area. However, the images are deleted after they have been copied.
- If you press the **COPY** button while copying is in progress, copying is canceled.

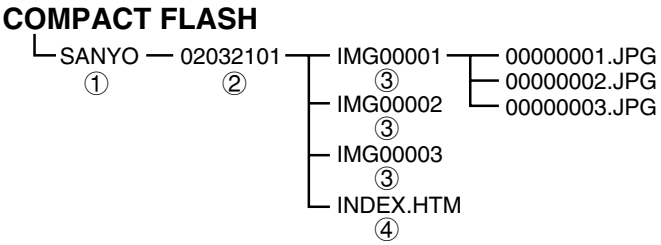
## Formatting CompactFlash cards

You can format CompactFlash cards and microdrives by selecting "**FORMAT COMPACTFLASH**". The formatting is according to FAT16 specifications.






## CompactFlash recording area




**① A SANYO folder is created in the root directory.**

**② Sub-folders for holding the copied images are created in sequence in the SANYO folder.**

**③ Sub-folders are created within the date/time folder with names starting from IMG00001. Each sub-folder can hold 200 images.**

**④ To view the file listing using a computer, use a browser such as Internet Explorer 5.0 or later to open the INDEX.HTM files. The JPEG files can be played back as a slideshow.**

**Note:**

- JPG images are recorded as field images, so that when they are viewed using the normal image viewer, they are compressed by 1/2 in the vertical direction. Make sure that you view them using the INDEX.HTM file.
- Images that have been copied onto a CompactFlash card contain codes for detecting file tampering, and these codes can be recognized by computer software applications that can detect file tampering. Contact the place of purchase for details.

# SAVING (COPYING) RECORDED IMAGES

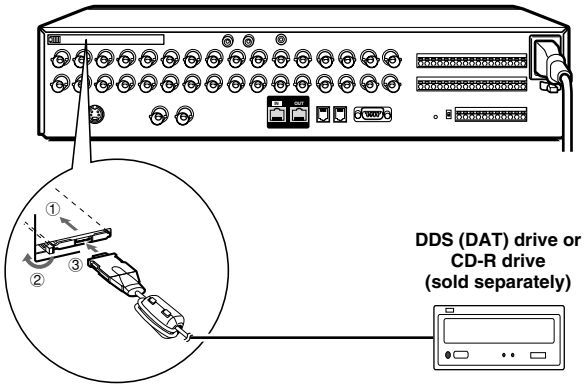
## C Copying images from the archive area to a DDS (DAT) drive or CD-R drive

### ☞ Connecting to a drive

**Insert a recommended SCSI card for connecting the DDS (DAT) drive into the PC card slot at the rear of the digital video recorder.**

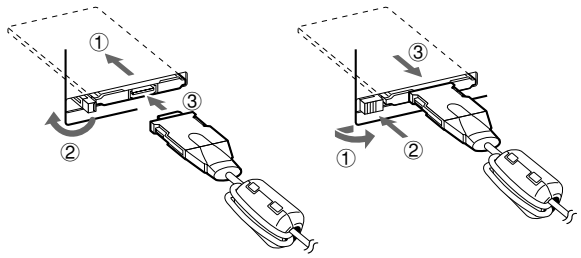
Images from the archive area can be copied to the DDS (DAT) drive, and images recorded on the DDS (DAT) drive can also be copied to the archive area.

- **Recommended SCSI card**
  Manufacturer: ADAPTEC
  Model No.: Slim SCSI 1460
- **Recommended DDS-3 type DDS (DAT) drive**
  Manufacturer: Hewlett Packard
  Model No.: Super Store dat 24e
- **Recommended CD-R drive**
  Manufacturer: YAMAHA
  Model: CRW2200IX-VK




**Inserting an SCSI card (sold separately)**

**(Installed)** **(Removed)**




**You can slide the knob to lock the card.**

**Return the knob after unlocking.**

**Note:**

- Check that the direction of insertion is correct when inserting the SCSI card.
- Be sure to attach the accessory ferrite cores to the SCSI card connection cable.
- If an SCSI card or DDS (DAT) drive other than the ones recommended is used, correct operation cannot be guaranteed.
- The compatible CD-R drive is a YAMAHA SCSI CD-R/RW drive, and the media must be CD-R discs only. CD-RW discs cannot be used.
- The PC card slot is for 16-bit 5 V cards only.
  Do not use 32-bit card bus types of card, as they may damage the PC card slot of the digital video recorder.

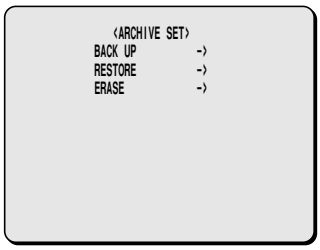
* DDS (Digital Data Strage)/DAT (Digital Audio Tape).

### Backing up to a DDS (DAT) drive

All of the data in the archive area can be backed up on a DDS (DAT) drive.

**1** **Press the COPY button during recording or when the digital video recorder is stopped.**

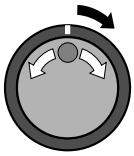
The ARCHIVE SET screen appears.

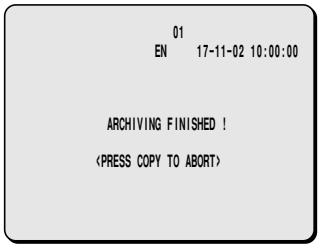



**2** **Use the jog dial to select BACK UP and then turn the shuttle dial clockwise.**

"**ARCHIVING TO DDS(DAT) !**" appears, and copying then starts.

- If you press the **COPY** button while copying is in progress, copying is canceled.
- **When copying is completed, "ARCHIVE FINISHED!" appears. Press any button to return to the normal screen.**






**Note:**

- When data is converted for storage on a DDS (DAT) drive, the conversion process may result in an increase in the size of the data. If copying images onto a 12 GB tape, it may only be possible to copy about 10 GB of data.
- It will take approximately 4 hours to copy 10 GB of data onto a DDS (DAT) drive.

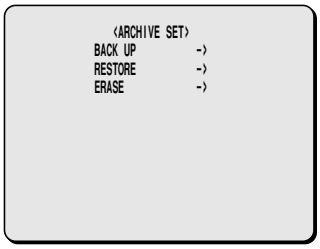
# SAVING (COPYING) RECORDED IMAGES

## Reading data from a DDS (DAT) drive into the archive area

**Note:** All of the previously recorded images in the archive area are deleted when images are transferred in this way.

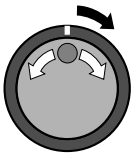
**1 Press the COPY button during recording or when the digital video recorder is stopped.**

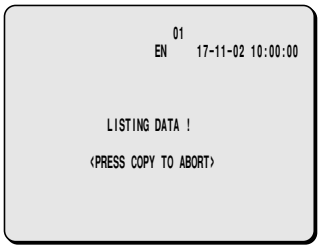
The ARCHIVE SET screen appears.




**2 Use the jog dial to select RESTORE and then turn the shuttle dial clockwise.**

The message "**LISTING DATA !**" appears. When playback is complete, the RESTORE FROM DDS (DAT) screen appears.





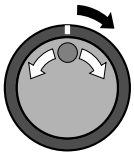

**3 Use the jog dial to select the data to be read into the archive area, and then turn the shuttle dial clockwise.**

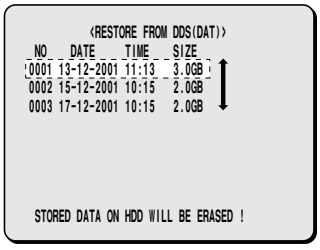
Reading of data starts. The RESTORE FROM DDS (DAT) screen appears.

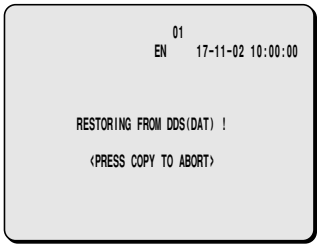
The image data on the DDS (DAT) drive is then saved into the archive area.

When all data has been read into the archive area, "**RESTORE FINISHED!**" appears.

When you play back the images in the archive area, the image data that has been read can be played back.



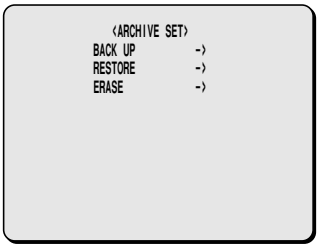

‹RESTORE FROM DDS(DAT)›
NO DATE TIME SIZE
0001 13-12-2001 11:13 3.0GB
0002 15-12-2001 10:15 2.0GB
0003 17-12-2001 10:15 2.0GB
STORED DATA ON HDD WILL BE ERASED !




## Deleting DDS (DAT) drive image data

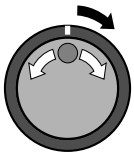
**1 Press the COPY button during recording or when the digital video recorder is stopped.**

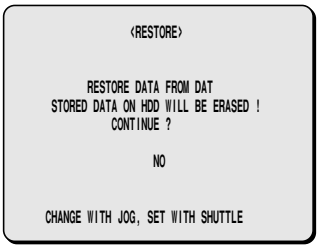
The ARCHIVE SET screen appears.




**2 Use the jog dial to select ERASE and then turn the shuttle dial clockwise.**

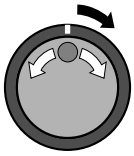
The WARNING screen appears.

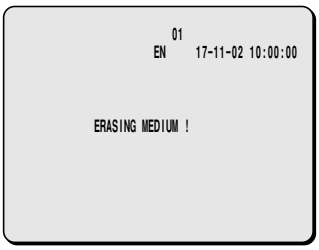





**3 Use the jog dial to change "NO" to "YES", and then turn the shuttle dial clockwise.**

"**ERASING MEDIUM!**" appears, and when erasing of data from the tape has been completed, "**ERASING FINISHED!**" appears.





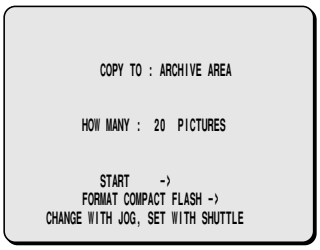
# SAVING (COPYING) RECORDED IMAGES

## Copying images to a CD-R drive

**1 While viewing the still image to be copied from the archive area, press the COPY button.**

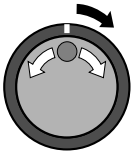
The COPY screen appears.

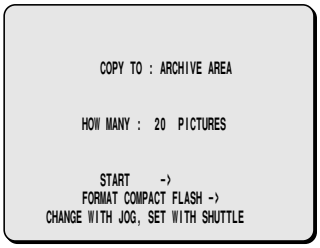
Refer to page 31 for details on playing back images in the archive area.




**2 Use the jog dial to select "COPY TO", and then turn the shuttle dial clockwise.**

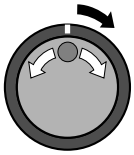
The "**ARCHIVE AREA**" display flashes.

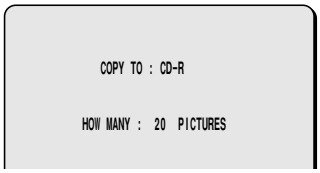





**3 Use the jog dial to select "CD-R", and then turn the shuttle dial clockwise.**

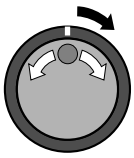
The cursor moves to "**HOW MANY**".

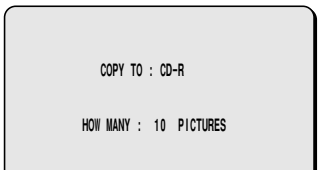





**4 Turn the shuttle dial clockwise, use the jog dial to set the number of images to "10", and then turn the shuttle dial clockwise.**

The cursor moves to "**PICTURES**".

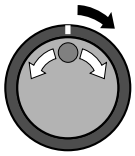


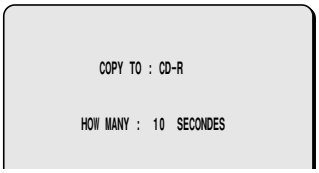



**5 Use the jog dial to select "SECONDS", and then turn the shuttle dial clockwise.**

The cursor moves to "**START**".

- **PICTURES:** The specified number of images are copied starting from the current image.
- **SECONDS:** The specified number of seconds of images are copied, starting from the current image.
- **MINUTES:** The specified number of minutes of images are coped, starting from the current image.
- **EVENTS:** The specified number of events are copied, starting from the current image.





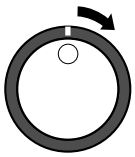

**Note:**

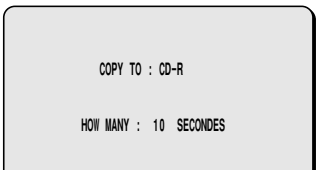
- Each time a copy operation is carried out, the images are copied to the archive area event by event as a single group. The capacity of the archive area can be set as desired up to a maximum limit of 10 GB.
- Only images from the archive area can be copied to a CD-R drive. Images cannot be copied directly from the normal recording area or alarm recording area to a CD-R.
- Depending on the duration of each event, it may not be possible to copy all of the events specified. (The maximum amount of data that can be copied is 650 MB.)
- In the case of the EVENTS setting, if you select the "**>60**" setting, copying will continue until the CD-R becomes full.

**6 Turn the shuttle dial clockwise.**

The COPY indicator illuminates, "**COPY TO: CD-R**" appears on the screen and copying to the CD-R starts.

When copying is finished, "**COPY FINISHED**" appears.





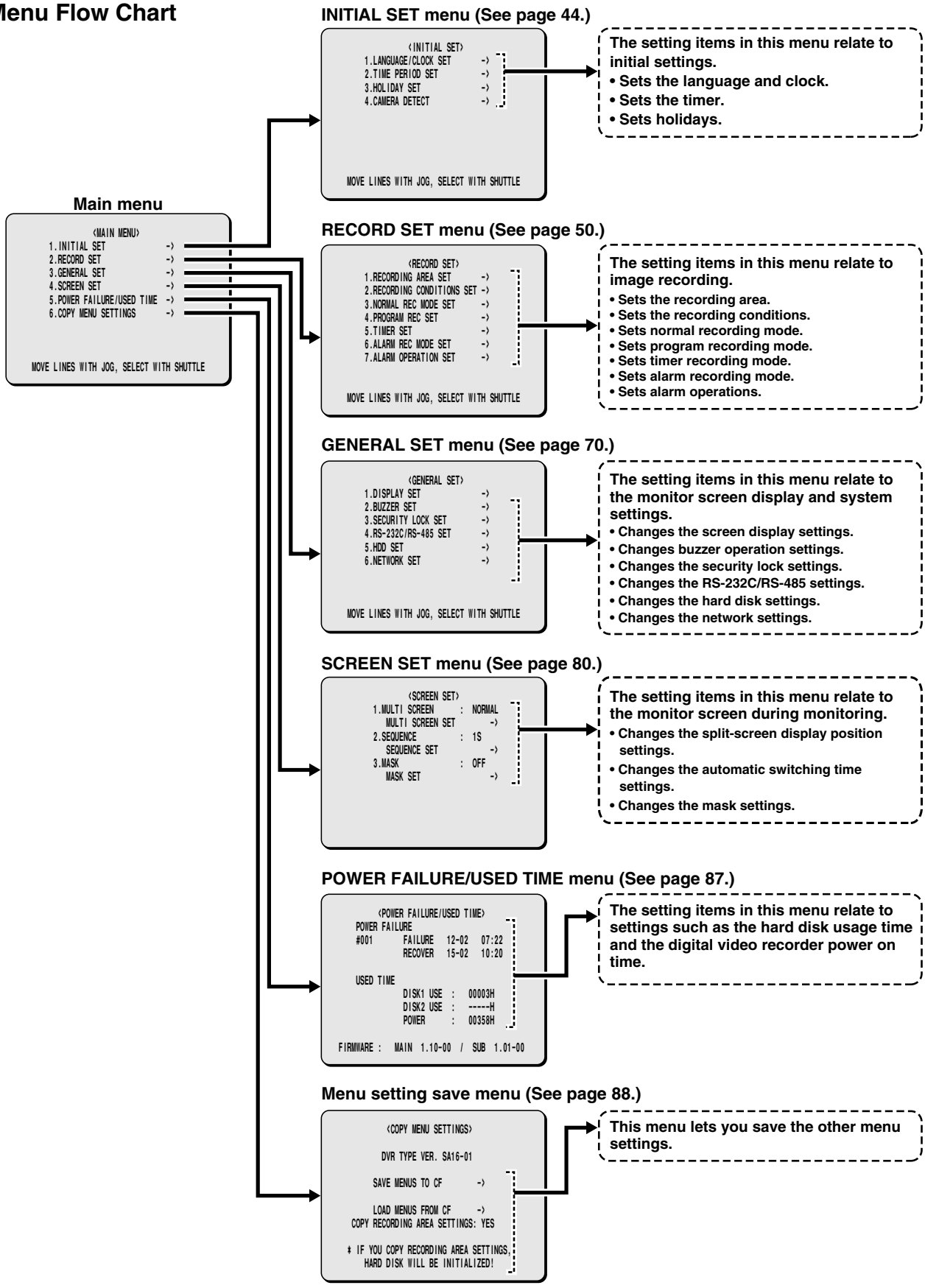

**Note:**

- At normal writing speed, it will take approximately 70 minutes or more to fill the CD-R.
- The files are not written in a general file format. You will need special computer application software. Contact the place of purchase for further details.
- Images cannot be copied back from the CD-R drive the digital video recorder. In addition, once images have been copied to a CD-R drive, the CD-R disk is closed and further copying of files to that disc will not be possible.
- If you press the **COPY** button while copying is in progress, copying will be canceled.

# MENU FLOW CHART AND MENU OPERATIONS

These menus let you make a variety of settings relating to recording and also relating to the multiplexer functions.
Recording and monitoring will not be possible unless the various settings have been made, so you should always make the appropriate settings for the usage conditions.

## ■ Menu Flow Chart

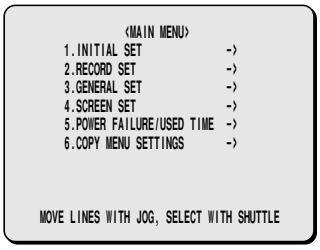

Main menu
〈MAIN MENU〉
1.INITIAL SET ->
2.RECORD SET ->
3.GENERAL SET ->
4.SCREEN SET ->
5.POWER FAILURE/USED TIME ->
6.COPY MENU SETTINGS ->
MOVE LINES WITH JOG, SELECT WITH SHUTTLE
INITIAL SET menu (See page 44.)
〈INITIAL SET〉
1.LANGUAGE/CLOCK SET ->
2.TIME PERIOD SET ->
3.HOLIDAY SET ->
4.CAMERA DETECT ->
MOVE LINES WITH JOG, SELECT WITH SHUTTLE
The setting items in this menu relate to initial settings.
• Sets the language and clock.
• Sets the timer.
• Sets holidays.
RECORD SET menu (See page 50.)
〈RECORD SET〉
1.RECORDING AREA SET ->
2.RECORDING CONDITIONS SET ->
3.NORMAL REC MODE SET ->
4.PROGRAM REC SET ->
5.TIMER SET ->
6.ALARM REC MODE SET ->
7.ALARM OPERATION SET ->
MOVE LINES WITH JOG, SELECT WITH SHUTTLE
The setting items in this menu relate to image recording.
• Sets the recording area.
• Sets the recording conditions.
• Sets normal recording mode.
• Sets program recording mode.
• Sets timer recording mode.
• Sets alarm recording mode.
• Sets alarm operations.
GENERAL SET menu (See page 70.)
〈GENERAL SET〉
1.DISPLAY SET ->
2.BUZZER SET ->
3.SECURITY LOCK SET ->
4.RS-232C/RS-485 SET ->
5.HDD SET ->
6.NETWORK SET ->
MOVE LINES WITH JOG, SELECT WITH SHUTTLE
The setting items in this menu relate to the monitor screen display and system settings.
• Changes the screen display settings.
• Changes buzzer operation settings.
• Changes the security lock settings.
• Changes the RS-232C/RS-485 settings.
• Changes the hard disk settings.
• Changes the network settings.
SCREEN SET menu (See page 80.)
〈SCREEN SET〉
1.MULTI SCREEN : NORMAL
MULTI SCREEN SET ->
2.SEQUENCE : 1S
SEQUENCE SET ->
3.MASK : OFF
MASK SET ->
The setting items in this menu relate to the monitor screen during monitoring.
• Changes the split-screen display position settings.
• Changes the automatic switching time settings.
• Changes the mask settings.
POWER FAILURE/USED TIME menu (See page 87.)
〈POWER FAILURE/USED TIME〉
POWER FAILURE
#001 FAILURE 12-02 07:22
RECOVER 15-02 10:20
USED TIME
DISK1 USE : 00003H
DISK2 USE : -----H
POWER : 00358H
FIRMWARE : MAIN 1.10-00 / SUB 1.01-00
The setting items in this menu relate to settings such as the hard disk usage time and the digital video recorder power on time.
Menu setting save menu (See page 88.)
〈COPY MENU SETTINGS〉
DVR TYPE VER. SA16-01
SAVE MENUS TO CF ->
LOAD MENUS FROM CF ->
COPY RECORDING AREA SETTINGS: YES
# IF YOU COPY RECORDING AREA SETTINGS, HARD DISK WILL BE INITIALIZED!
This menu lets you save the other menu settings.

# MENU FLOW CHART AND MENU OPERATIONS

## ■ Basic menu screen operations

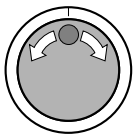
**1 Press the MENU button.**

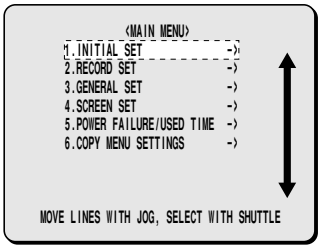
The MAIN MENU screen appears.




**2 Turn the jog dial clockwise or counterclockwise to move the cursor to the menu items (example: INITIAL SET).**

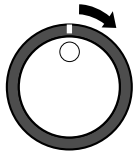
The selected item is highlighted.

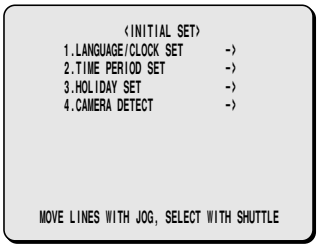





**3 Turn the shuttle dial clockwise.**

The sub-menu appears.



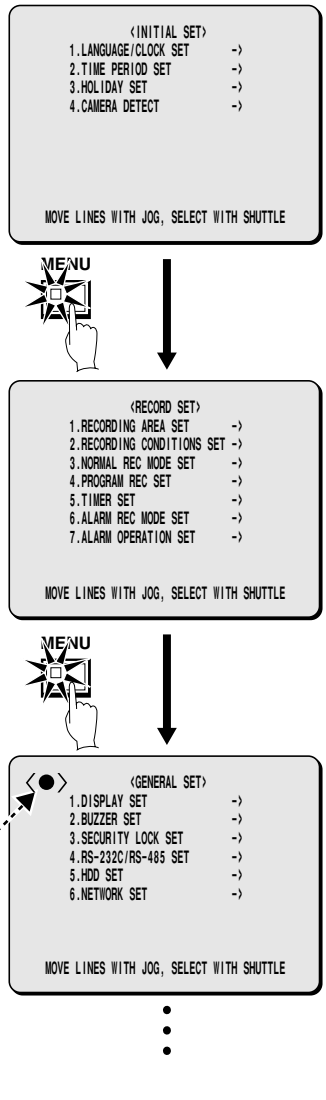



**4 Press the EXIT/OSD button.**

The display returns to the normal screen.

## ■ Operations while a sub-menu screen is displayed

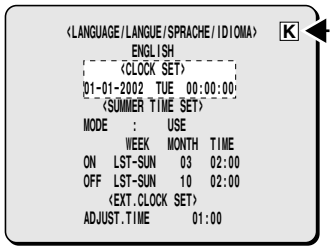
If you press the **MENU** button while a sub-menu screen is displayed, you can check the settings in the sub-menu screens.




**Note:** You can display menus even while images are being recorded in one of the recording areas. In such cases, the recording symbol <●> appears on the screen. The menus can only be displayed at this time; the settings cannot be changed.
To change the settings, stop recording. The menu screens cannot be displayed while playback is in progress.

## ■ Entering numbers

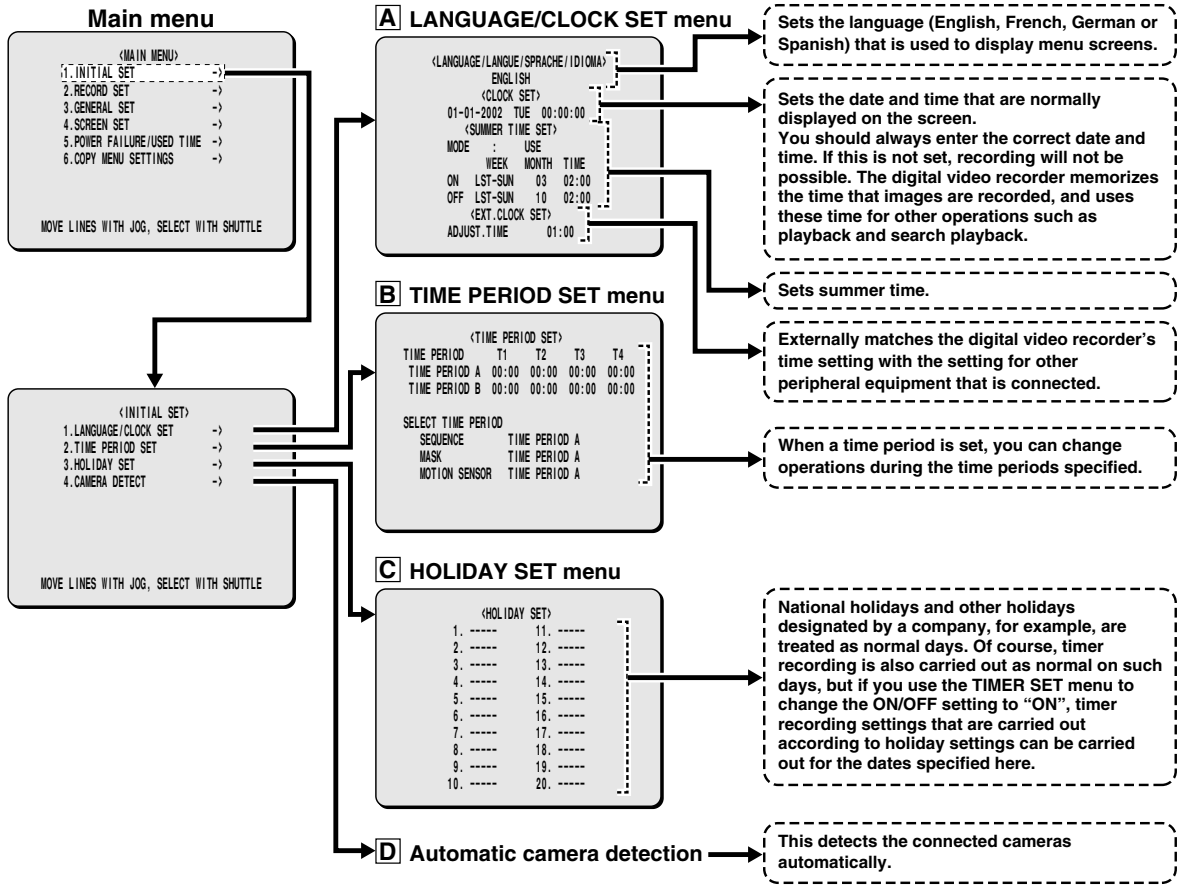
If [K] is displayed at the top of the menu screen, you can use the numeric keys (camera select buttons: 1 to 16 for the DSR-3016P and 1 to 9 for the DSR-3009P) on the digital video recorder to enter numbers directly as well as using the jog dial to enter numbers.




**Use camera select buttons 1 to 9. To enter "0", press the QUAD button.**

# INITIAL SET MENU

These menus let you make a variety of settings relating initial settings.


Main menu
〈MAIN MENU〉
1.INITIAL SET ->
2.RECORD SET ->
3.GENERAL SET ->
4.SCREEN SET ->
5.POWER FAILURE/USED TIME ->
6.COPY MENU SETTINGS ->
MOVE LINES WITH JOG, SELECT WITH SHUTTLE
〈INITIAL SET〉
1.LANGUAGE/CLOCK SET ->
2.TIME PERIOD SET ->
3.HOLIDAY SET ->
4.CAMERA DETECT ->
MOVE LINES WITH JOG, SELECT WITH SHUTTLE
A LANGUAGE/CLOCK SET menu
〈LANGUAGE/LANGUE/SPRACHE/IDIOMA〉
ENGLISH
〈CLOCK SET〉
01-01-2002 TUE 00:00:00
〈SUMMER TIME SET〉
MODE : USE
WEEK MONTH TIME
ON LST-SUN 03 02:00
OFF LST-SUN 10 02:00
〈EXT.CLOCK SET〉
ADJUST.TIME 01:00
Sets the language (English, French, German or Spanish) that is used to display menu screens.
Sets the date and time that are normally displayed on the screen.
You should always enter the correct date and time. If this is not set, recording will not be possible. The digital video recorder memorizes the time that images are recorded, and uses these time for other operations such as playback and search playback.
Sets summer time.
Externally matches the digital video recorder's time setting with the setting for other peripheral equipment that is connected.
B TIME PERIOD SET menu
〈TIME PERIOD SET〉
TIME PERIOD T1 T2 T3 T4
TIME PERIOD A 00:00 00:00 00:00 00:00
TIME PERIOD B 00:00 00:00 00:00 00:00
SELECT TIME PERIOD
SEQUENCE TIME PERIOD A
MASK TIME PERIOD A
MOTION SENSOR TIME PERIOD A
When a time period is set, you can change operations during the time periods specified.
C HOLIDAY SET menu
〈HOLIDAY SET〉
1. ----- 11. -----
2. ----- 12. -----
3. ----- 13. -----
4. ----- 14. -----
5. ----- 15. -----
6. ----- 16. -----
7. ----- 17. -----
8. ----- 18. -----
9. ----- 19. -----
10. ----- 20. -----
National holidays and other holidays designated by a company, for example, are treated as normal days. Of course, timer recording is also carried out as normal on such days, but if you use the TIMER SET menu to change the ON/OFF setting to "ON", timer recording settings that are carried out according to holiday settings can be carried out for the dates specified here.
D Automatic camera detection
This detects the connected cameras automatically.

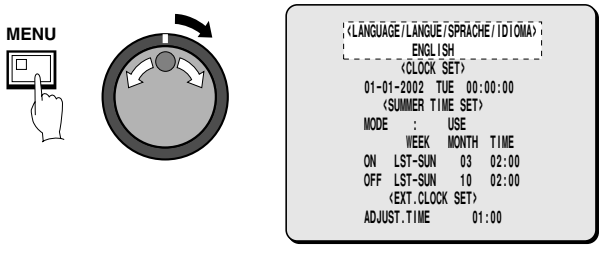
## A LANGUAGE/CLOCK SET menu

This describes how to set the menu screen language and the date and time that are normally displayed on the screen. In addition, if more than one device is connected to the digital video recorder, you can adjust the time settings for all of these devices so that they are identical.

### ■Setting the language

**(default setting: English)**

This sets the language that is used to display menu screens.




**1 Press the MENU button to select INITIAL SET, and then turn the shuttle dial clockwise.**

The INITIAL SET sub-menu appears, and the cursor is positioned at LANGUAGE/CLOCK SET.

**2 Press the MENU button to select LANGUAGE/CLOCK SET, and then turn the shuttle dial clockwise.**

The LANGUAGE/LANGUE/SPRACHE/IDIOMA sub-menu appears, and the cursor is moves to "**ENGLISH**".

**3 Turn the shuttle dial clockwise.**

"**ENGLISH**" flashes.

**4 Turn the jog dial to select the language (example: "FRANCAIS"), and then turn the shuttle dial clockwise.**

The language is switched to French and the cursor moves to the date and time.

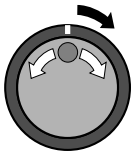
# INITIAL SET MENU

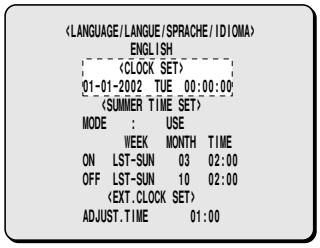
## ■CLOCK SET settings

**(default setting: 01-01-2002 TUE 00:00:00)**

You should always set the date and time correctly. This digital video recorder includes the recording time with recorded images, and uses this time for playback and searching.

**Example: To set the date and time to 8.30 a.m. on 22 May 2002**






**1 When the cursor is at the CLOCK SET time setting, turn the shuttle dial clockwise.**

"**01** (Day)" flashes.

**2 Turn the jog dial to select "22: day", and then turn the shuttle dial clockwise.**

The cursor moves to the "**01**" month setting and flashes.

22-01-2002 TUE 00:00:00

**3 Use the same procedure to set the month (5), year (2002), hour (08), minutes (30) and seconds.**

When the minutes have been set, the cursor moves to the MODE setting in the SUMMER TIME SET menu.

If using the camera select buttons to enter the year, enter the last two digits of the year.

**Note:**

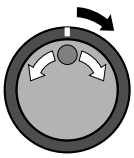
- The clock will stop while the time is being set. The clock will start counting again once the minutes have been set.
- The time can also be set using the numeric keys. (See page 43.)

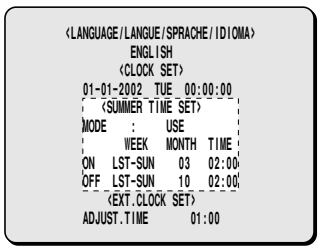
## ■Setting summer time

This procedure describes how to set summer time.

If set to "**ON**", the hour setting will increase by 1. If set to "**OFF**", the hour setting will decrease by 1.

**Example: To start summer time at 2.00 a.m. on the first Sunday in April, and end it at 2.00 a.m. on the 4th Sunday in October**






**1 Turn the jog dial to move the cursor to the MODE setting in the SUMMER TIME SET menu, and then turn the shuttle dial clockwise.**

"**USE**" flashes.

**2 Use the jog dial to set "USE", and then turn the shuttle dial clockwise.**

The cursor moves to "**ON**".

**Display examples:**

- **USE:** Summer time is used.
- **NO USE:** Summer time is not used.

**3 Turn the shuttle dial clockwise.**

The cursor moves to the "**LST**" setting in the "**WEEK**" column.

ON LST SUN 03 00:00

**4 Turn the jog dial to select "1ST", and then turn the shuttle dial clockwise.**

The cursor moves to "**SUN**".

ON 1ST SUN 03 00:00

**5 Turn the jog dial to select "SUN", and then turn the shuttle dial clockwise.**

The cursor moves to "**03**" in the "**MONTH**" column.

**Note:** This can also be set using the numeric keys. (See page 43.)

ON 1ST-SUN 03 00:00

**6 Turn the jog dial to select "04", and then turn the shuttle dial clockwise.**

The cursor moves to "**00**" in the "**TIME**" (hour) column.

ON 1ST-SUN 04 00:00

**7 Turn the jog dial to select "02" (hour), and then turn the shuttle dial clockwise.**

The cursor moves to "**00**" in the "**TIME**" (minutes) column.

ON 1ST-SUN 04 02:00

**8 Turn the jog dial to select "00" (minute), and then turn the shuttle dial clockwise.**

The cursor moves to "**OFF**".

ON 1ST-SUN 04 02:00
OFF LST-SUN 10 02:00

**9 Repeat the above procedure to set the ending time.**

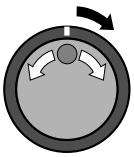
When the summer time settings are complete, the cursor moves to the ADJUST. TIME setting in the EXT. CLOCK SET menu.

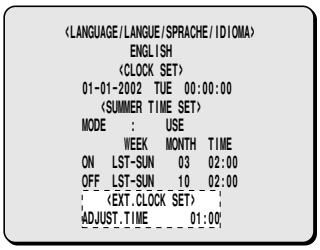
# INITIAL SET MENU

## ■ EXT. CLOCK SET setting

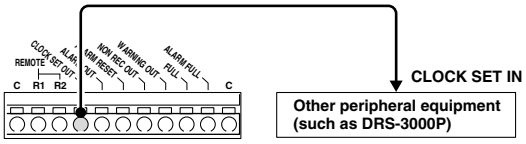
**(default setting: 01:00)**

If more than two devices are connected at the same time, the time settings (ADJUST TIME) for the digital video recorder are also applied to these devices.






**1 Connect the other devices to the input terminal (CLOCK SET IN) and output terminal (CLOCK SET OUT) at the rear of the digital video recorder.**




**2 Turn the jog dial to move the cursor to the ADJUST TIME setting in the EXT. CLOCK SET menu, and then turn the shuttle dial clockwise.**

"**01**" flashes.

**3 Turn the jog dial to set the hours (example: "05"), and then turn the shuttle dial clockwise.**

**4 Press the EXIT/OSD button.**

The display returns to the normal screen.

## B TIMER settings

**(default setting: 00:00)**

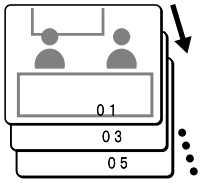
The timer function uses two separate timer settings (TIME PERIOD A and TIME PERIOD B), and each timer setting can be made in four time zones (example: midnight, morning, daytime, night).

For example, TIME PERIOD A time zones can be set for automatic screen switching and TIME PERIOD B time zones can be set for gray pattern cover on camera images.

**Morning**

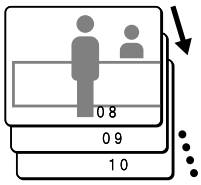
**6:00 – 11:00**
**Images from cameras 1, 3, 5 and 6 are switched automatically**

**Timer 1**



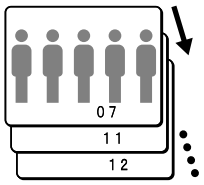

**Daytime**

**Timer 2**




**11:00 – 13:00**
**Images from cameras 8, 9, 10 and 16 are switched automatically**

**Timer 3**

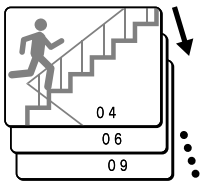



**13:00 – 18:00**
**Images from cameras 7, 11, 12 and 13 are switched automatically**

**Night**

**18:00 – 6:00**
**Images from cameras 4, 6, 9, 12 and 16 are switched automatically**

**Timer 4**

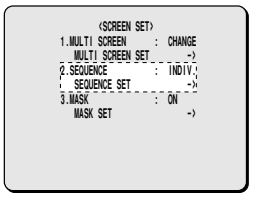


# INITIAL SET MENU

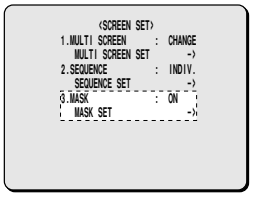
## ☞Operable functions during the period set by the timer

Each of the following menu settings is required to operate these timer functions. After you have made the menu settings, be sure to make the timer settings.

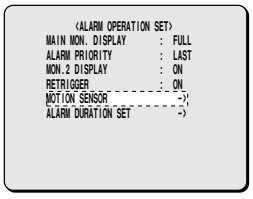
- **To change camera images into automatic switching screens.**
  Set "**SEQUENCE**" on SCREEN SET screen




- **To hide camera images with a gray pattern**
  Set the "**MASK**" setting in the SCREEN SET menu.



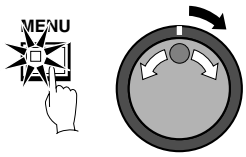

- **To detect an alarm input in a camera image**
  Set "**MOTION SENSOR**" on ALARM OPERATION SET screen




For these settings, set Example 2 consecutively with Example 1.

### Example 1: Set TIME PERIOD A and TIME PERIOD B time zones as follows

| (TIME PERIOD A settings) | (TIME PERIOD B settings) |
|---|---|
| T1 4 a.m. (4:00) | T1 6 a.m. (6:00) |
| T2 6:30 a.m. (6:30) | T2 8 a.m. (8:00) |
| T3 12:30 p.m. (12:30) | T3 2:30 p.m. (14:30) |
| T4 6 p.m. (18:00) | T4 8 p.m. (20:00) |





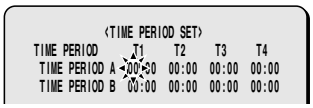
〈TIME PERIOD SET〉
TIME PERIOD T1 T2 T3 T4
TIME PERIOD A 00:00 00:00 00:00 00:00
TIME PERIOD B 00:00 00:00 00:00 00:00
SELECT TIME PERIOD
SEQUENCE TIME PERIOD A
MASK TIME PERIOD A
MOTION SENSOR TIME PERIOD A

**1** **Press the MENU button to select INITIAL SET, and then turn the shuttle dial clockwise.**
The INITIAL SET sub-menu appears, and the cursor is positioned at LANGUAGE/CLOCK SET.

**2** **Use the jog dial to move the cursor to TIME PERIOD SET, and then turn the shuttle dial clockwise.**
The TIME PERIOD SET sub-menu appears.

**3** **Turn the jog dial to select TIME PERIOD A, and then turn the shuttle dial clockwise.**

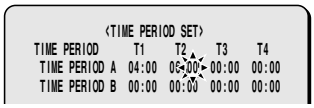
**Note:** This can also be set using the numeric keys. (See page 43.)
"**00**" (hour) flashes in the "**T1**" column.




**4** **Turn the jog dial to change the T1 setting to "04" (hour), and then turn the shuttle dial clockwise.**
"**00**" (minutes) flashes in the "**T1**" column.

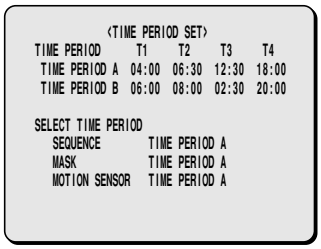
**5** **Turn the jog dial to change the T1 setting to "00" (minutes), and then turn the shuttle dial clockwise.**
"**00**" (hour) flashes in the "**T2**" column.

**6** **Turn the jog dial to change the T2 setting to "06" (hour), and then turn the shuttle dial clockwise.**
"**00**" (minutes) flashes in the "**T2**" column.




**7** **Turn the jog dial to change the T2 setting to "30" (minutes), and then turn the shuttle dial clockwise.**
"**00**" (hour) flashes in the "**T3**" column.
Repeat steps **3** to **6** to set the hours and minutes for T3 and T4.

**8** **Repeat the above procedure to set the hour and minutes for T1, T2, T3 and T4 for TIME PERIOD B.**

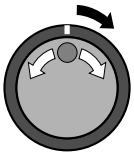

〈TIME PERIOD SET〉
TIME PERIOD T1 T2 T3 T4
TIME PERIOD A 04:00 06:30 12:30 18:00
TIME PERIOD B 06:00 08:00 02:30 20:00
SELECT TIME PERIOD
SEQUENCE TIME PERIOD A
MASK TIME PERIOD A
MOTION SENSOR TIME PERIOD A

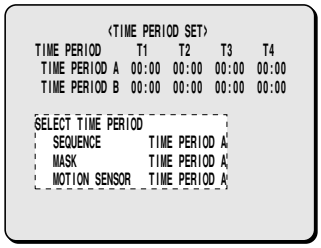
# INITIAL SET MENU

**Example 2: Set the timer operation as follows**

☞ **To set TIME PERIOD A time zones to automatic switching screen and monitor mask.**

☞ **To set TIME PERIOD B timer zones for the motion sensor.**




‹TIME PERIOD SET›
TIME PERIOD T1 T2 T3 T4
TIME PERIOD A 00:00 00:00 00:00 00:00
TIME PERIOD B 00:00 00:00 00:00 00:00
SELECT TIME PERIOD
SEQUENCE TIME PERIOD A
MASK TIME PERIOD A
MOTION SENSOR TIME PERIOD A

**1** **Turn the jog dial to move the cursor to the SEQUENCE setting in the SELECT TIME PERIOD menu, and then turn the shuttle dial clockwise.**

The cursor moves to TIME PERIOD A.

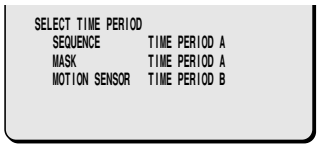
**2** **Turn the jog dial to change the setting to "TIME PERIOD A" (TIME PERIOD A setting), and then turn the shuttle dial clockwise.**

The cursor moves to MASK.

**3** **Turn the shuttle dial clockwise to move the cursor to "TIME PERIOD A", use the jog dial to change the MASK setting to "TIME PERIOD A" (TIME PERIOD A setting), and then turn the shuttle dial clockwise.**

The cursor moves to MOTION.

**4** **Turn the shuttle dial clockwise to move the cursor to "TIME PERIOD A", and then use the jog dial to change the MOTION setting to "TIME PERIOD B" (TIME PERIOD B setting).**

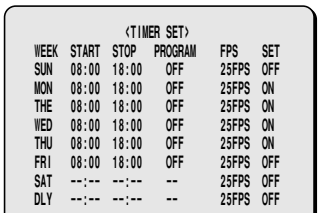



**5** **Press the EXIT/OSD button.**

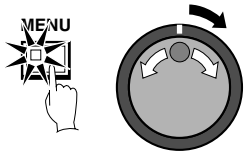
This completes the timer setting. The display returns to the normal screen.

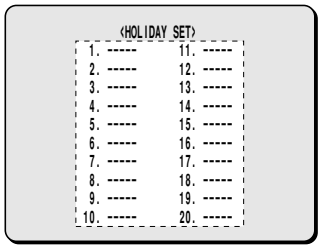
## C HOLIDAY SET setting

**Note:** For a timer setting make sure that you make the time settings for Sunday (SUN) before changing SET to "**ON**". (See page 56.)


‹TIMER SET›
WEEK START STOP PROGRAM FPS SET
SUN 08:00 18:00 OFF 25FPS OFF
MON 08:00 18:00 OFF 25FPS ON
THE 08:00 18:00 OFF 25FPS ON
WED 08:00 18:00 OFF 25FPS ON
THU 08:00 18:00 OFF 25FPS ON
FRI 08:00 18:00 OFF 25FPS OFF
SAT --:-- --:-- -- 25FPS OFF
DLY --:-- --:-- -- 25FPS OFF

**Example: To set 17 November as a holiday**




**1** **Press the MENU button to select INITIAL SET, and then turn the shuttle dial clockwise.**

The INITIAL SET sub-menu appears, and the cursor is positioned at LANGUAGE/CLOCK SET.

**2** **Use the jog dial to move the cursor to HOLIDAY SET, and then turn the shuttle dial clockwise.**

The HOLIDAY SET sub-menu appears.

**3** **Turn the shuttle dial clockwise.**

"– –" (day) flashes in the line 1.

1. -----

**4** **Use the jog dial to change from "– –" to "17", and then turn the shuttle dial clockwise.**

"– –" (day) flashes in the line 1.

1. 17---

**5** **Use the jog dial to change from "– –" to "11", and then turn the shuttle dial clockwise.**

The cursor moves to the line 2.

1. 17-11
2. -----

**6** **Follow the same procedure to set other holiday dates.**

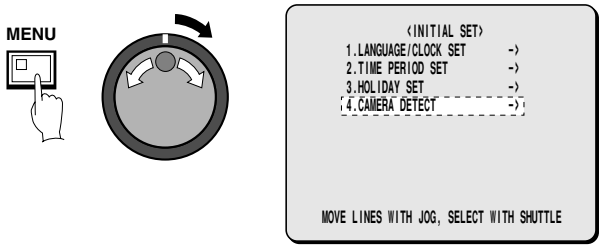
**7** **Press the EXIT/OSD button.**

The display returns to the normal screen.

# INITIAL SET MENU

## D Automatic camera detection

This automatically detects the cameras that are connected to the digital video recorder and changes all settings for cameras that are not connected to "**OFF**".



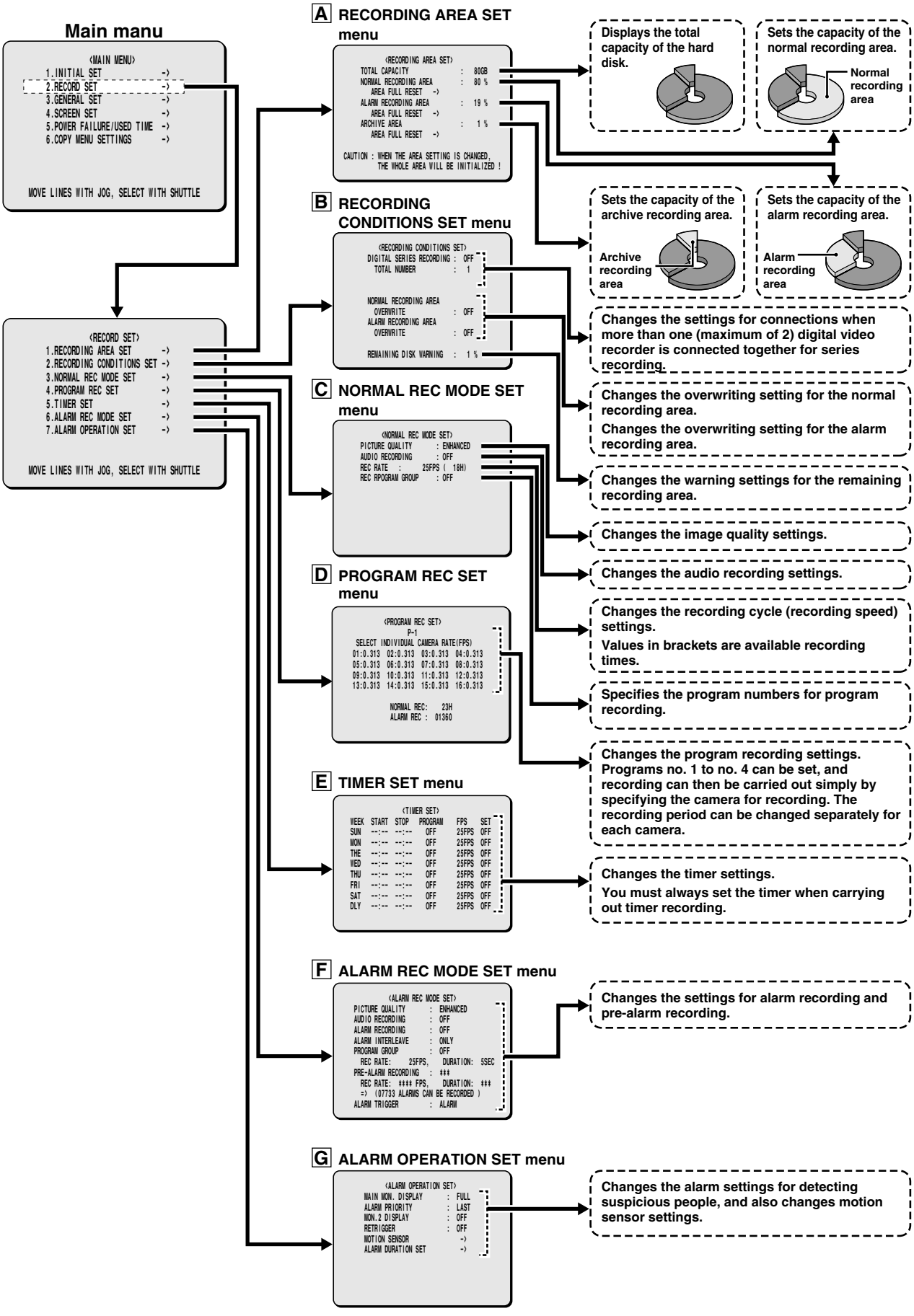

**1** **Press the MENU button to display the INITIAL SET menu screen, and then turn the shuttle dial clockwise.**

The INITIAL SET sub-menu appears, and the cursor moves to LANGUAGE/CLOCK SET.

**2** **Use the jog dial to move the cursor to CAMERA DETECT, and then turn the shuttle dial clockwise.**

All cameras that are connected to the digital video recorder are detected, and the settings for any unconnected cameras are changed to "**OFF**".

# RECORDING SETTING


Main manu
〈MAIN MENU〉
1.INITIAL SET ->
2.RECORD SET ->
3.GENERAL SET ->
4.SCREEN SET ->
5.POWER FAILURE/USED TIME ->
6.COPY MENU SETTINGS ->
MOVE LINES WITH JOG, SELECT WITH SHUTTLE
〈RECORD SET〉
1.RECORDING AREA SET ->
2.RECORDING CONDITIONS SET ->
3.NORMAL REC MODE SET ->
4.PROGRAM REC SET ->
5.TIMER SET ->
6.ALARM REC MODE SET ->
7.ALARM OPERATION SET ->
MOVE LINES WITH JOG, SELECT WITH SHUTTLE
A RECORDING AREA SET menu
〈RECORDING AREA SET〉
TOTAL CAPACITY : 80GB
NORMAL RECORDING AREA : 80 %
AREA FULL RESET ->
ALARM RECORDING AREA : 19 %
AREA FULL RESET ->
ARCHIVE AREA : 1 %
AREA FULL RESET ->
CAUTION : WHEN THE AREA SETTING IS CHANGED, THE WHOLE AREA WILL BE INITIALIZED !
Displays the total capacity of the hard disk.
Sets the capacity of the normal recording area.
Normal recording area
Sets the capacity of the archive recording area.
Archive recording area
Sets the capacity of the alarm recording area.
Alarm recording area
B RECORDING CONDITIONS SET menu
〈RECORDING CONDITIONS SET〉
DIGITAL SERIES RECORDING : OFF
TOTAL NUMBER : 1
NORMAL RECORDING AREA
OVERWRITE : OFF
ALARM RECORDING AREA
OVERWRITE : OFF
REMAINING DISK WARNING : 1 %
Changes the settings for connections when more than one (maximum of 2) digital video recorder is connected together for series recording.
Changes the overwriting setting for the normal recording area.
Changes the overwriting setting for the alarm recording area.
Changes the warning settings for the remaining recording area.
C NORMAL REC MODE SET menu
〈NORMAL REC MODE SET〉
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
REC RATE : 25FPS ( 18H)
REC RPOGRAM GROUP : OFF
Changes the image quality settings.
Changes the audio recording settings.
Changes the recording cycle (recording speed) settings.
Values in brackets are available recording times.
D PROGRAM REC SET menu
〈PROGRAM REC SET〉
P-1
SELECT INDIVIDUAL CAMERA RATE(FPS)
01:0.313 02:0.313 03:0.313 04:0.313
05:0.313 06:0.313 07:0.313 08:0.313
09:0.313 10:0.313 11:0.313 12:0.313
13:0.313 14:0.313 15:0.313 16:0.313
NORMAL REC: 23H
ALARM REC : 01360
Specifies the program numbers for program recording.
Changes the program recording settings. Programs no. 1 to no. 4 can be set, and recording can then be carried out simply by specifying the camera for recording. The recording period can be changed separately for each camera.
E TIMER SET menu
〈TIMER SET〉
WEEK START STOP PROGRAM FPS SET
SUN --:-- --:-- OFF 25FPS OFF
MON --:-- --:-- OFF 25FPS OFF
THE --:-- --:-- OFF 25FPS OFF
WED --:-- --:-- OFF 25FPS OFF
THU --:-- --:-- OFF 25FPS OFF
FRI --:-- --:-- OFF 25FPS OFF
SAT --:-- --:-- OFF 25FPS OFF
DLY --:-- --:-- OFF 25FPS OFF
Changes the timer settings.
You must always set the timer when carrying out timer recording.
F ALARM REC MODE SET menu
〈ALARM REC MODE SET〉
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
ALARM RECORDING : OFF
ALARM INTERLEAVE : ONLY
PROGRAM GROUP : OFF
REC RATE: 25FPS, DURATION: 5SEC
PRE-ALARM RECORDING : ###
REC RATE: #### FPS, DURATION: ###
=> (07733 ALARMS CAN BE RECORDED )
ALARM TRIGGER : ALARM
Changes the settings for alarm recording and pre-alarm recording.
G ALARM OPERATION SET menu
〈ALARM OPERATION SET〉
MAIN MON. DISPLAY : FULL
ALARM PRIORITY : LAST
MON.2 DISPLAY : OFF
RETRIGGER : OFF
MOTION SENSOR ->
ALARM DURATION SET ->
Changes the alarm settings for detecting suspicious people, and also changes motion sensor settings.

# RECORDING SETTING

## A RECORDING AREA SET menu

This describe how to make the various settings for each recording area.

## ■TOTAL CAPACITY display

This shows the total recording capacity of the hard disk. This display cannot be changed except when the hard disk capacity itself is changed.

With the initial hard disk setting, the normal recording area takes up 80%, the alarm recording area takes up 19% and the archive area takes up 1% of the disk capacity. The upper limit is 10 GB (12.5% of total capacity when using an 80-GB hard disk 6% of total capacity when using an 160-GB hard disk), so you cannot set a value greater than this.

The assignment of space to each recording area is displayed as a percentage of the total. The normal recording area and alarm recording area together can be set to a maximum of 99% of the total space.

The archive area cannot be set manually. It is forcibly assigned to a minimum of 1%. Accordingly, if the normal recording area and the alarm recording area are set to a total of 85%, the archive area will be automatically set to 15%.

For example, if the normal recording area is set to 0% and the alarm recording area is set to 99%, normal recording images will not be saved onto the hard disk. Only alarm recording images will be saved. The recording capacity for each recording area should be assigned according to the requirements of the particular recording location.

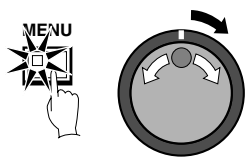
If an additional hard disk is added, the increased capacity will be included in the TOTAL CAPACITY display.

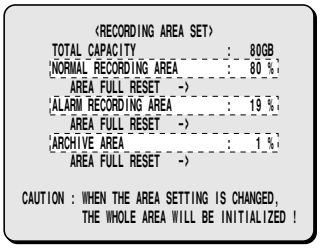
**Note:**

- If you change the assignment of space to each recording area of the hard disk while recording is in progress, the images which have been recorded up until that point will be erased. This is because the hard disk itself is initialized during this operation, so be very careful when making this kind of setting. If you need to change the sizes of the recording areas for some reason, make sure that you make a backup copy of the images on some other medium such as a computer.
- When the MIRRORING of the HDD SET setting has been set to "**ON**", the TOTAL CAPACITY display of RECORDING AREA SET shows a smaller value for the hard disk capacity.

## ■Resetting each recording area

### Example: Set the normal recording area to 50% and the alarm recording area to 49%





〈RECORDING AREA SET〉
TOTAL CAPACITY : 80GB
NORMAL RECORDING AREA : 80 %
AREA FULL RESET ->
ALARM RECORDING AREA : 19 %
AREA FULL RESET ->
ARCHIVE AREA : 1 %
AREA FULL RESET ->
CAUTION : WHEN THE AREA SETTING IS CHANGED,
THE WHOLE AREA WILL BE INITIALIZED !

**1 Press the MENU button to select RECORD SET, and then turn the shuttle dial clockwise.**

The RECORD SET sub-menu appears, and the cursor moves to RECORDING AREA SET.

**2 Use the jog dial to move the cursor to RECORDING AREA SET, and then turn the shuttle dial clockwise.**

The RECORDING AREA SET sub-menu appears, and the cursor is positioned at NORMAL RECORDING AREA.

**3 Use the jog dial to move the cursor to NORMAL RECORDING AREA, and then turn the shuttle dial clockwise.**

"**80%**" flashes.

**4 Use the jog dial to change the setting, for example from "80%" to "50%", and then turn the shuttle dial clockwise.**

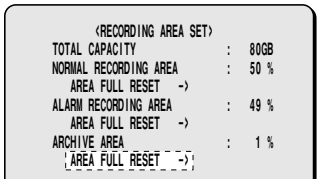
The cursor moves to ALARM RECORDING AREA.

**5 Turn the shuttle dial clockwise.**

"**36%**" flashes.

**6 Turn the jog dial to change the setting, for example from 36% to 49%, and then turn the shuttle dial clockwise.**

The cursor moves to AREA FULL RESET.

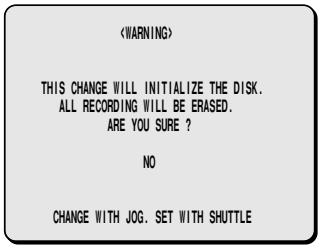

〈RECORDING AREA SET〉
TOTAL CAPACITY : 80GB
NORMAL RECORDING AREA : 50 %
AREA FULL RESET ->
ALARM RECORDING AREA : 49 %
AREA FULL RESET ->
ARCHIVE AREA : 1 %
AREA FULL RESET ->

**7 Turn the shuttle dial counterclockwise.**

The screen changes to show a "**WARNING**" display. This is a message to warn you that the hard disk is about to be reinitialized.

**8 To reinitialize the hard disk, turn the jog dial to display "YES", and then turn the shuttle dial clockwise.**

The RECORDING AREA SET screen appears and the recording capacities for each area are changed.




**Note:** If you turn the shuttle dial clockwise when "**NO**" is selected, the RECORDING AREA SET screen appears and the recording capacities return to their previous settings. The hard disk is not reinitialized in this case.

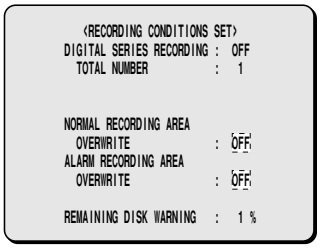
# RECORDING SETTING

## ■AREA FULL RESET setting

When the normal recording area and alarm recording area of the hard disk become full, the images in the recording areas will be automatically overwritten, starting from the oldest images that have been recorded.

However, you can change this setting to prevent overwriting of images when the recording areas become full, at times such as when you want to check or edit the recorded images. In this case you need to specify each time that you want images to be overwritten in each recording area. The following procedure describes the method of doing this.

**1 Set the OVERWRITE setting for the NORMAL RECORDING AREA or ALARM RECORDING AREA to "OFF" in the RECORDING CONDITIONS SET menu. (See page 53.)**

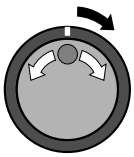


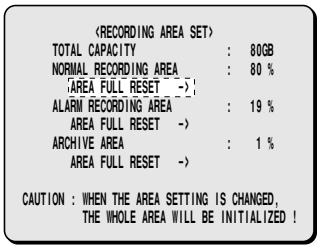

This setting can be used to display the remaining recording area of the hard disk on the screen. At the same time, the FULL or ALARM FULL indicator at the front of the digital video recorder will flash.

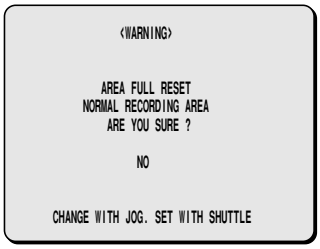
When writing to the hard disk is complete, you can use playback operations to check the recordings.

**2 Use the jog dial to move the cursor to the AREA FULL RESET → setting for the NORMAL RECORDING AREA, and then turn the shuttle dial clockwise.**

"**NO**" flashes on the WARNING screen.




〈RECORDING AREA SET〉
TOTAL CAPACITY : 80GB
NORMAL RECORDING AREA : 80 %
AREA FULL RESET ->
ALARM RECORDING AREA : 19 %
AREA FULL RESET ->
ARCHIVE AREA : 1 %
AREA FULL RESET ->
CAUTION : WHEN THE AREA SETTING IS CHANGED,
THE WHOLE AREA WILL BE INITIALIZED !




**3 Use the jog dial to change "NO" to "YES", and then turn the shuttle dial clockwise.**

The NORMAL RECORDING AREA is set to single overwriting.

**4 Follow the same procedure to make the setting for the ALARM RECORDING AREA.**

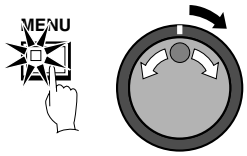
**5 Press the EXIT/OSD button.**

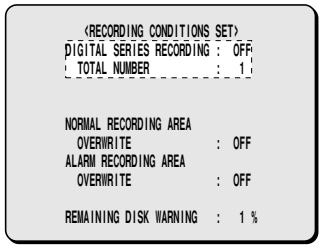
The display returns to the normal screen.

**Note:** For overwriting to be carried out automatically, change the OVERWRITE setting for the NORMAL RECORDING AREA or ALARM RECORDING AREA to "**ON**".

## B RECORDING CONDITIONS SET menu

This describe how to make settings for recording.




## ■Recording settings for digital series connection (maximum 2 units besides this unit)

**1 Connect the digital video recorders using the digital input and output terminals of each digital video recorder. (See page 8.)**

**Note:** Use a straight-type STP (shielded twisted pair) Ethernet cable to connect the digital video recorders. Each cable should not be any longer than 3 meters.

**2 Press the MENU button to select RECORD SET, and then turn the shuttle dial clockwise.**

The RECORD SET sub-menu appears, and the cursor moves RECORDING AREA SET.

**3 Use the jog dial to move the cursor to RECORDING CONDITIONS SET, and then turn the shuttle dial clockwise.**

The RECORDING CONDITIONS SET sub-menu appears, and the cursor is positioned at DIGITAL SERIES RECORDING.

**4 Turn the shuttle dial clockwise.**

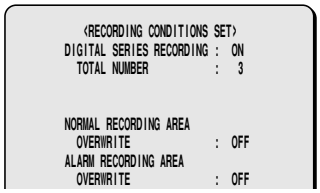
"**OFF**" flashes.

**5 Use the jog dial to change the setting to "ON", and then turn the shuttle dial clockwise.**

The cursor moves to TOTAL NUMBER.

**6 Turn the shuttle dial clockwise, use the jog dial to set the total number of digital video recorders connected (example: 3), and then turn the shuttle dial clockwise.**

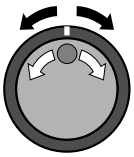
The cursor moves to OVERWRITE.

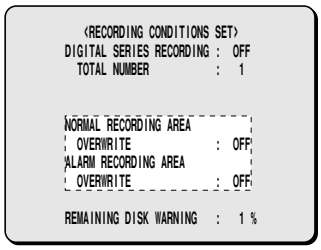



**Note:** If NETWORK CONTROL in the NETWORK SET menu has been set to "**ON**", DIGITAL SERIES RECORDING cannot be selected (See page 78.). Conversely, if DIGITAL SERIES RECORDING has been set to "**ON**", NETWORK CONTROL cannot be set to "**ON**".

## ■ Setting NORMAL RECORDING AREA OVERWRITE and REMAINING DISK WARNING on the operating display section

When the recording areas of the hard disk become full, you can set whether old images are to overwritten, or whether recording should stop. If recording is set to stop, the current percentage of free space remaining on the hard disk will appear on the operating display section. You can use "**REMAINING DISK WARNING**" to specify the amount of free space remaining.






**1 When the cursor is at the OVERWRITE setting, turn the shuttle dial clockwise.**

"**ON**" flashes.

**2 Use the jog dial to select the setting (example: OFF), and then turn the shuttle dial clockwise.**

REMAINING DISK WARNING changes from ✱✱ to 1%.

**Display examples:**

- **OFF:** When the normal recording area becomes full, recording stops.
- **ON:** When the normal recording area becomes full, images are overwritten automatically starting from the earliest recorded images.

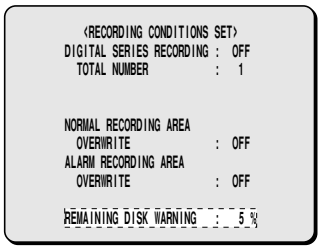
**Note:** If "**OFF**" is selected, the REMAINING DISK WARNING setting shows the percentage of hard disk space remaining that triggers the FULL or ALARM FULL indicator on the front panel to start flashing.

**3 Follow the same procedure to make the setting (OFF) for the ALARM RECORDING AREA.**

**Note:** Make the settings separately for each item in the menu, even if making a digital connection. The OVERWRITE settings for second and subsequent units must match the setting for the first unit.

**4 When the cursor is at the REMAINING DISK WARNING setting, turn the shuttle dial clockwise, and then use the jog dial to set the display value for the amount of disk space remaining (example: "5").**

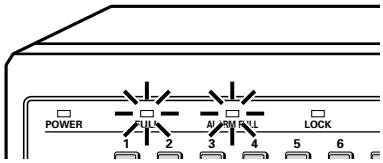
**Note:** The REMAINING DISK WARNING setting can be between 1% (default setting) and 10%.




**5 Press the EXIT/OSD button.**

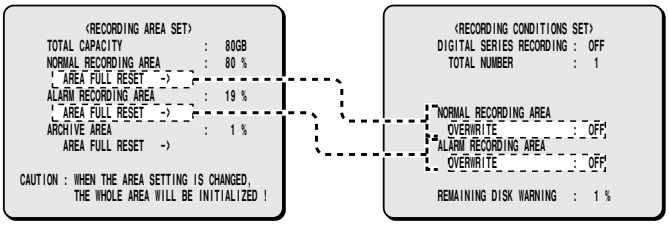
The display returns to the normal screen.

When the remaining disk space in each area reaches 5%, it is displayed in the operating display section. The FULL (for normal recording area) or ALARM FULL (for alarm recording area) indicator on the front of the digital video recorder flashes.



# RECORDING SETTING

### Relationship between RECORDING AREA SET and OVERWRITE


‹RECORDING AREA SET›
TOTAL CAPACITY : 80GB
NORMAL RECORDING AREA : 80 %
AREA FULL RESET ->
ALARM RECORDING AREA : 19 %
AREA FULL RESET ->
ARCHIVE AREA : 1 %
AREA FULL RESET ->
CAUTION : WHEN THE AREA SETTING IS CHANGED,
THE WHOLE AREA WILL BE INITIALIZED !
‹RECORDING CONDITIONS SET›
DIGITAL SERIES RECORDING : OFF
TOTAL NUMBER : 1
NORMAL RECORDING AREA
OVERWRITE : OFF
ALARM RECORDING AREA
OVERWRITE : OFF
REMAINING DISK WARNING : 1 %

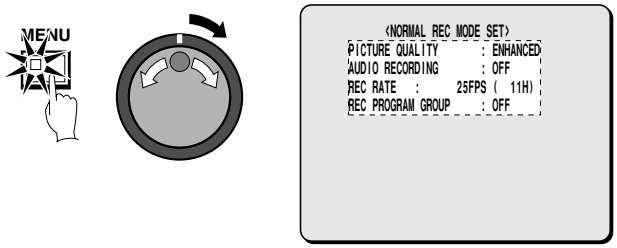
If the normal recording area and alarm recording area become full, select AREA FULL RESET for the normal recording area or alarm recording area in the RECORDING AREA SET menu. (See page 52.)

**Note:** No audio input is provided from the digital video input terminals. Audio signals can be input as analog signals via the audio input terminals (such as the MIC terminal). For details on CONNECTIONS, see page 8.

## C NORMAL REC MODE SET menu

This describe how to make the settings for image quality, audio recording and recording speed for images recorded in the normal recording area. In addition, you can also specify program numbers that have been set in REC PROGRAM GROUP.

## ■NORMAL REC MODE SET setting




**1 Press the MENU button to select RECORD SET, and then turn the shuttle dial clockwise.**

The RECORD SET sub-menu appears, and the cursor moves to RECORDING AREA SET.

**2 Use the jog dial to move the cursor to NORMAL REC MODE SET, and then turn the shuttle dial clockwise.**

The NORMAL REC MODE SET sub-menu appears, and the cursor is positioned at PICTURE QUALITY.

**3 Turn the shuttle dial clockwise.**

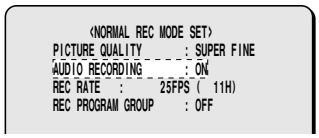
"**ENHANCED**" flashes.

**Display examples: Picture quality selection**

- **BASIC (BQ):** (15 KB)
- **NORMAL (NQ):** (22 KB)
- **ENHANCED (EN):** (30 KB)
- **FINE (FI):** (42 KB)
- **SUPER FINE (SF):** (56 KB)

**4 Use the jog dial to change select the image quality (example: "SUPER FINE"), and then turn the shuttle dial clockwise.**

The cursor moves to AUDIO RECORDING.




**5 Turn the shuttle dial clockwise, use the jog dial to set audio recording (example: "ON"), and then turn the shuttle dial.**

The cursor moves to REC RATE.

**Note:**

- Audio recording can be set when the REC RATE setting is from 8.33FPS to 50FPS.
- When set to "**ON**", the letter "**A**" (audio recording indicator) appears in front of the REC RATE recording rate. This is because the audio recordings are also made in the normal recording area, so that the image recording capacity of the normal recording area is reduced.

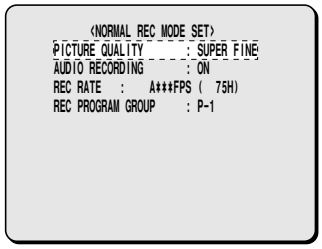
**6 Turn the shuttle dial clockwise, use the jog dial to set the recording speed (example: "0.1"), and then turn the shuttle dial.**

The cursor moves to REC PROGRAM GROUP.

**Note:** The field and frame recording speeds vary depending on the PICTURE QUALITY setting. Refer to the Recording speed table for details. (See page 12.)

**7 Turn the shuttle dial clockwise, use the jog dial to set the program number (example: P-1), and then turn the shuttle dial clockwise.**

The cursor moves to PICTURE QUALITY.




**Display examples:**

- **OFF:** Images from all cameras are recorded.
- **P-1:** When program no. 1 is recorded.
- **P-2:** When program no. 2 is recorded.
- **P-3:** When program no. 3 is recorded.
- **P-4:** When program no. 4 is recorded.

**Note:** When specifying a program number, carry out the settings in "**PROGRAM REC SET menu**". (See page 55.)

**8 Press the EXIT/OSD button.**

The display returns to the normal screen.

# RECORDING SETTING

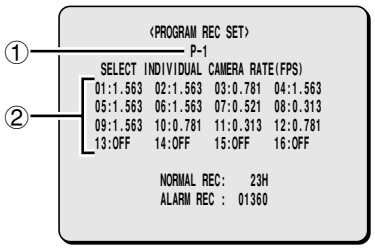
## D PROGRAM REC SET menu

Recording for particular cameras only can be carried out by specifying those cameras. Programs from no. 1 to no. 4 can be set. For example, program no. 1 could be set to record images from cameras 1 to 4 only, and program no. 2 could be set to record images from cameras 3 to 9. In addition, these programs can be used during timer recording and pre-alarm recording also.

**Display examples:**

To set program no. 1 to record only images from cameras 1 to 3

**Only images (1 – 3) from selected cameras are recorded**




① **P-1**

Select a program number from 1 to 4.

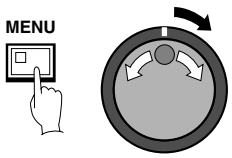
② **SELECT INDIVIDUAL CAMERA RATE (FPS)**

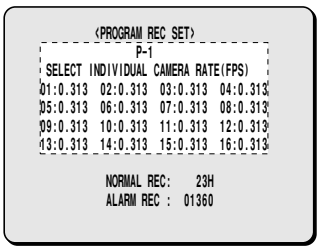
Select the cameras to be recorded from the connected cameras 1 to 16). The recording speed can also be set for each camera. (**PROGRAM REC RECORDING RATE** see page 90.)

**Note:** The maximum speed for program recording is 25 FPS. The maximum speed for each camera is 25 FPS divided by the number of cameras that are set to "**ON**". For example, if 10 cameras have been set to "**ON**", the maximum speed for each camera will be 2.5 FPS.

### Example: To set program no. 1 to record only images from cameras 1, 2 and 3

For the DSR-3009P model, you can select cameras from 1 to 9.




**1 Press the MENU button to select RECORD SET, and then turn the shuttle dial clockwise.**

The RECORD SET sub-menu appears, and the cursor is positioned at RECORDING AREA SET.

**2 Use the jog dial to move the cursor to PROGRAM REC SET, and then turn the shuttle dial clockwise.**

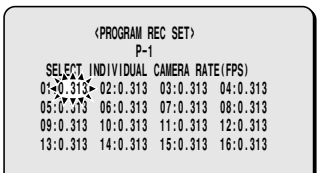
The PROGRAM REC SET sub-menu appears, and the cursor is positioned at P-1.

**3 Turn the shuttle dial clockwise, use the jog dial to set the program number (example: P-1), and then turn the shuttle dial clockwise.**

The cursor moves to 01.

**4 Turn the shuttle dial clockwise.**

"**0.313**" (camera number) flashes.




**5 Turn the shuttle dial clockwise, use the jog dial to set the recording speed (example: 0.521), and then turn the shuttle dial clockwise.**

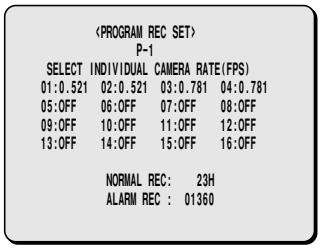
Camera 1 will record at a speed of 0.521. The cursor then moves to "**02**".

**6 Repeat the above procedure to set the recording speeds for cameras 2 and 3.**

**7 With the cursor at "04" (camera number), use the jog dial to change the setting to "OFF", and then turn the shuttle dial clockwise.**

Images from camera 4 will not be recorded.

**8 Repeat the above procedure to set cameras 5 to 16 to "OFF".**




**9 Repeat the above procedure to make settings for other program numbers (2 to 4).**

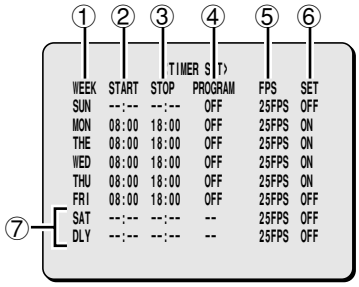
**10 Press the EXIT/OSD button.**

The display returns to the normal screen.

# RECORDING SETTING

## E TIMER SET menu

These settings must always be made when carrying out timer recording.


① ② ③ ④ ⑤ ⑥
⑦
〈TIMER SET〉
WEEK START STOP PROGRAM FPS SET
SUN --:-- --:-- OFF 25FPS OFF
MON 08:00 18:00 OFF 25FPS ON
THE 08:00 18:00 OFF 25FPS ON
WED 08:00 18:00 OFF 25FPS ON
THU 08:00 18:00 OFF 25FPS ON
FRI 08:00 18:00 OFF 25FPS OFF
SAT --:-- --:-- -- 25FPS OFF
DLY --:-- --:-- -- 25FPS OFF

## ■TIMER SET setting

This sets the starting time and stopping time for each day, and also sets the recording speed.

① **WEEK**

This selects the day for the timer setting. While a day is flashing another day can be selected. The 7th line (SAT) and 8th line (DLY) are used for setting a timer recording for a period of more than 24 hours.

② **START**

This is used to enter the starting time for timer recording.

③ **STOP**

This is used to enter the stopping time for timer recording.

④ **PROGRAM**

This sets whether a program recording function (P-1 to P-4) is to be used for timer recording. See page 55 for further details on program recording.

⑤ **REC RATE**

Sets the recording speed.

This does not need to be entered if a program has been set.

⑥ **SET**

Set to "**ON**" when using timer recording.

Set to "**OFF**" when not using timer recording.

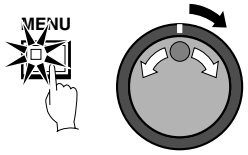
⑦ **For setting a timer recording of more than 24 hours.**

Use this line for a timer recording of more than 24 hours.

**Note:** The picture quality, frame/field recording and audio recording settings for timer recording will be the settings used for recording in the normal recording area.

## ■Timer reservations every day at the same time with the same image quality

**Example: Timer recording every day from 8:30 a.m. to 6:30 p.m. at the same recording speed**




〈TIMER SET〉

| WEEK | START | STOP | PROGRAM | FPS | SET |
|---|---|---|---|---|---|
| SUN | --:-- | --:-- | OFF | 25FPS | OFF |
| MON | --:-- | --:-- | OFF | 25FPS | OFF |
| THE | --:-- | --:-- | OFF | 25FPS | OFF |
| WED | --:-- | --:-- | OFF | 25FPS | OFF |
| THU | --:-- | --:-- | OFF | 25FPS | OFF |
| FRI | --:-- | --:-- | OFF | 25FPS | OFF |
| SAT | --:-- | --:-- | OFF | 25FPS | OFF |
| DLY | --:-- | --:-- | OFF | 25FPS | OFF |

**1 Press the MENU button to select RECORD SET, and then turn the shuttle dial clockwise.**

The RECORD SET sub-menu appears, and the cursor moves to RECORDING AREA SET.

**2 Use the jog dial to move the cursor to TIMER SET, and then turn the shuttle dial clockwise.**

The TIMER SET sub-menu appears, and the cursor is positioned at "**SUN**".

**3 Turn the shuttle dial clockwise.**

"**SUN**" flashes in the WEEK column.

SUN --:-- --:-- OFF 25FPS OFF

**4 Use the jog dial to change from "SUN" to "DLY", and then turn the shuttle dial.**

"– –" (hours) flashes in the START column.

DLY -- --:-- OFF 25FPS OFF

**5 Use the jog dial to change from "– –" to "08", and then turn the shuttle dial clockwise.**

"– –" (minutes) flashes in the START column.

**Note:** This can also be set using the numeric keys. (See page 43.)

DLY 08 --:-- OFF 25FPS OFF

**6 Use the jog dial to change from "– –" to "30", and then turn the shuttle dial clockwise.**

"– –" (hours) flashes in the STOP column.

DLY 08:30 -- OFF 25FPS OFF

**7 Use the jog dial to change from "– –" to "18", and then turn the shuttle dial clockwise.**

"– –" (minutes) flashes in the STOP column.

DLY 08:30 18 OFF 25FPS OFF

**8 Use the jog dial to change from "– –" to "30", and then turn the shuttle dial clockwise.**

"**OFF**" flashes in the PROGRAM column.

DLY 08:30 18:30 OFF 25FPS OFF

**9** **Use the jog dial to change the setting to “OFF”, and then turn the shuttle dial clockwise.**

“**25**” flashes in the FPS column.

DLY 08:30 18:30 OFF 25FPS OFF

**10** **Use the jog dial to set the recording cycle to “12.50”, and then turn the shuttle dial clockwise.**

“**OFF**” flashes in the SET column.

DLY 08:30 18:30 OFF 12.50FPS OFF

**Note:** The image quality for timer recording will be the image quality that was set by PICTURE QUALITY in the NORMAL REC MODE SET sub-menu.
Example: The recording will be NORMAL. Then recording speed the same as the speed previously set. In addition, the recording speed will be the speed that was set using the NORMAL REC MODE SET menu.

**11** **Use the jog dial to change “OFF” to “ON”, and then turn the shuttle dial clockwise.**

The cursor moves to MON.

〈TIMER SET〉

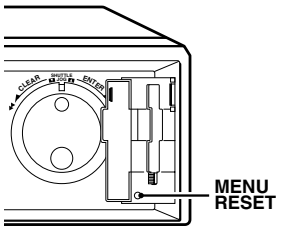
| WEEK | START | STOP | PROGRAM | FPS | SET |
|---|---|---|---|---|---|
| SUN | 08:30 | 18:30 | OFF | 12.50FPS | ON |
| MON | --:-- | --:-- | OFF | 30FPS | OFF |
| THE | --:-- | --:-- | OFF | 30FPS | OFF |
| WED | --:-- | --:-- | OFF | 30FPS | OFF |
| THU | --:-- | --:-- | OFF | 30FPS | OFF |
| FRI | --:-- | --:-- | OFF | 30FPS | OFF |
| SAT | --:-- | --:-- | OFF | 30FPS | OFF |
| DLY | --:-- | --:-- | OFF | 30FPS | OFF |

**12** **Press the EXIT/OSD button.**

The display returns to the normal screen.

**Note:**

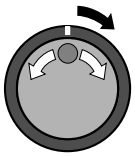
- If you want to use different days, times, and recording speeds for timer recording, select the respective WEEK column and make the required settings.
- If timer reservations overlap each other, the one that starts first will have priority.
- To delete all timer reservations (including time settings), press the **MENU RESET** button of the front panel.




## ■ Timer reservations spanning more than 24 hours

24-hour timer reservations can be made using the 7th row (SAT) and 8th row (DLY) in the TIMER SET screen.

### Example: To set timer recording from 10.30 a.m. on Monday to 8.30 p.m. on Wednesday



〈TIMER SET〉

| WEEK | START | STOP | PROGRAM | FPS | SET |
|---|---|---|---|---|---|
| SUN | --:-- | --:-- | OFF | 25FPS | OFF |
| MON | --:-- | --:-- | OFF | 25FPS | OFF |
| THE | --:-- | --:-- | OFF | 25FPS | OFF |
| WED | --:-- | --:-- | OFF | 25FPS | OFF |
| THU | --:-- | --:-- | OFF | 25FPS | OFF |
| FRI | --:-- | --:-- | OFF | 25FPS | OFF |
| SAT | --:-- | --:-- | OFF | 25FPS | OFF |
| DLY | --:-- | --:-- | OFF | 25FPS | OFF |

**1** **Use the jog dial to move the cursor to the 7th line (SAT), and then turn the shuttle dial.**

“**SAT**” flashes in the WEEK column.

**2** **Use the jog dial to change from “SAT” to “MON”, and then turn the shuttle dial clockwise.**

“– –” (hours) flashes in the START column.

**Note:** This can also be set using the numeric keys. (See page 43.)

MON --:-- OFF 25FPS OFF

**3** **Use the jog dial to change from “– –” to “10”, and then turn the shuttle dial clockwise.**

“– –” (minutes) flashes in the START column.

**4** **Use the jog dial to change from “– –” to “30”, and then turn the shuttle dial clockwise.**

“– –” (hours) flashes in the STOP column.

MON 10:30 -- OFF 25FPS OFF

**5** **Use the jog dial to change from “– –” to “✱✱”, and then turn the shuttle dial clockwise.**

The DLY setting on the 8th line automatically changes to the following day (TUE) of the weekday indicated in the 7th line changed to “**TUE**”. Parts which do not need to be set appear with a “✱” symbol.

MON 10:30 ✱✱:✱✱ ✱✱✱ ✱✱✱✱FPS ✱✱✱
TUE --:-- --:-- OFF 25FPS OFF

**6** **Use the jog dial to change from “TUE” to “WED”, and then turn the shuttle dial clockwise.**

“– –” (hours) flashes in the STOP column.

WED ✱✱:✱✱ -- OFF 25FPS OFF

**7** **Use the jog dial to change from "– –" to "20", and then turn the shuttle dial clockwise.**

"– –" (minutes) flashes in the STOP column.

**8** **Use the jog dial to change from "– –" to "30", and then turn the shuttle dial clockwise.**

The "**OFF**" setting for PROGRAM flashes.

**9** **Use the jog dial to change the setting to "OFF", and then turn the shuttle dial clockwise.**

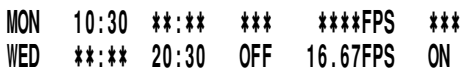
"**25**" flashes in the FPS column.

**10** **Use the jog dial to set the recording cycle to "16.67", and then turn the shuttle dial clockwise.**

"**OFF**" flashes in the SET column.

**11** **Use the jog dial to change from "OFF" to "ON", and then turn the shuttle dial clockwise.**

The cursor moves to the first line.



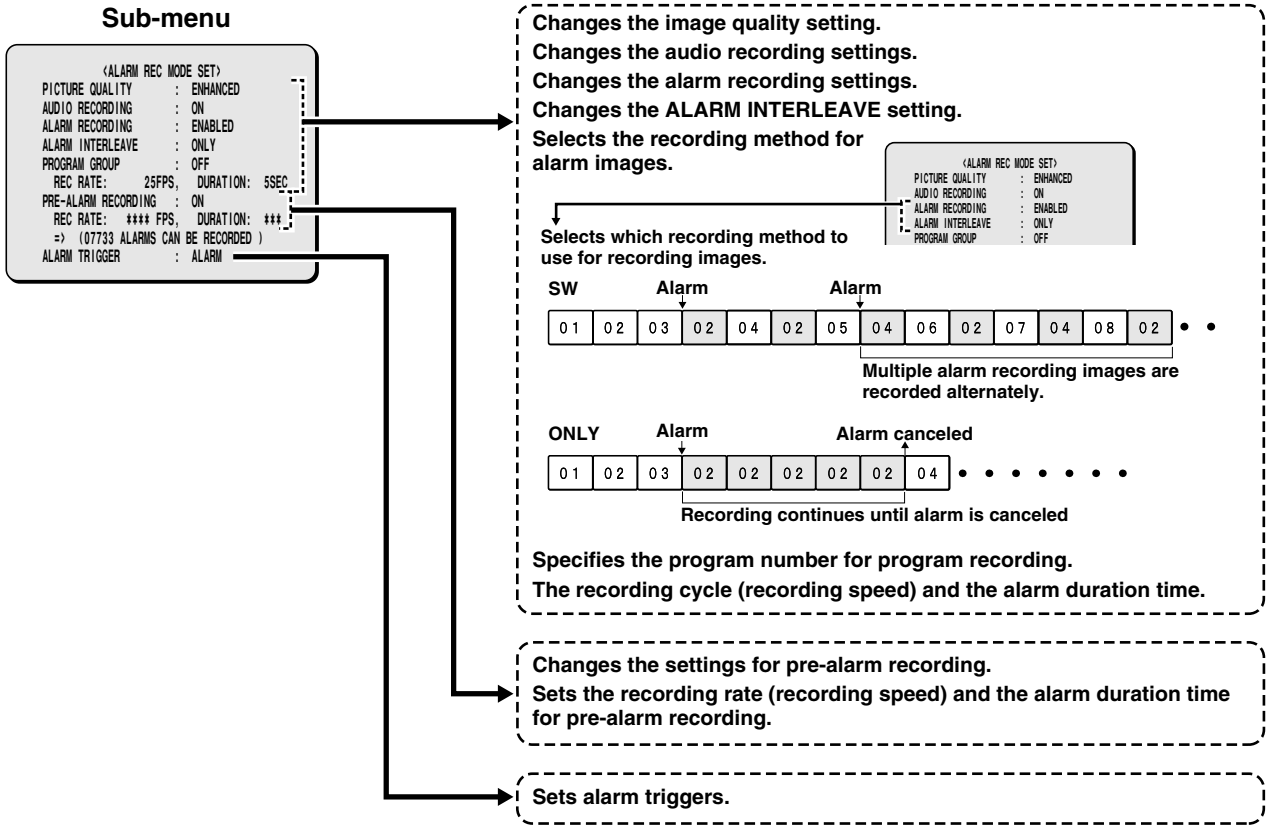

**12** **Press the EXIT/OSD button.**

The display returns to the normal screen.

# RECORDING SETTING

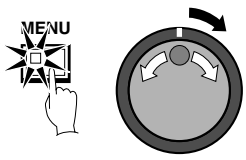
## F ALARM REC MODE SET menu

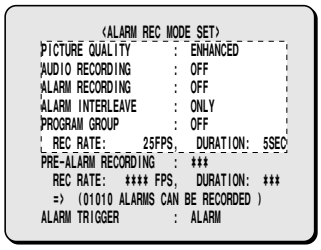
These settings relate to alarm recording.


Sub-menu
〈ALARM REC MODE SET〉
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : ON
ALARM RECORDING : ENABLED
ALARM INTERLEAVE : ONLY
PROGRAM GROUP : OFF
REC RATE: 25FPS, DURATION: 5SEC
PRE-ALARM RECORDING : ON
REC RATE: #### FPS, DURATION: ###
=> (07733 ALARMS CAN BE RECORDED )
ALARM TRIGGER : ALARM
Changes the image quality setting.
Changes the audio recording settings.
Changes the alarm recording settings.
Changes the ALARM INTERLEAVE setting.
Selects the recording method for alarm images.
Selects which recording method to use for recording images.
SW
Alarm
Alarm
01 02 03 02 04 02 05 04 06 02 07 04 08 02
Multiple alarm recording images are recorded alternately.
ONLY
Alarm
Alarm canceled
01 02 03 02 02 02 02 02 04
Recording continues until alarm is canceled
Specifies the program number for program recording.
The recording cycle (recording speed) and the alarm duration time.
Changes the settings for pre-alarm recording.
Sets the recording rate (recording speed) and the alarm duration time for pre-alarm recording.
Sets alarm triggers.

## ■ALARM REC MODE SET setting

This lets you set the recording quality, recording method (frame or field), audio recording and recording speed for the alarm recording area.





〈ALARM REC MODE SET〉
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
ALARM RECORDING : OFF
ALARM INTERLEAVE : ONLY
PROGRAM GROUP : OFF
REC RATE: 25FPS, DURATION: 5SEC
PRE-ALARM RECORDING : ###
REC RATE: #### FPS, DURATION: ###
=> (01010 ALARMS CAN BE RECORDED )
ALARM TRIGGER : ALARM

**1 Press the MENU button to select RECORD SET, and then turn the shuttle dial clockwise.**

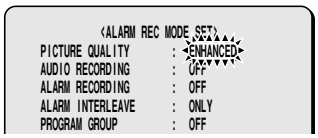
The RECORD SET sub-menu appears, and the cursor moves to RECORDING AREA SET.

**2 Use the jog dial to move the cursor to ALARM REC MODE SET, and then turn the shuttle dial clockwise.**

The ALARM REC MODE SET sub-menu appears, and the cursor is positioned at PICTURE QUALITY.

**3 Turn the shuttle dial clockwise.**

"**ENHANCED**" flashes.


〈ALARM REC MODE SET〉
PICTURE QUALITY : ENHANCED
AUDIO RECORDING : OFF
ALARM RECORDING : OFF
ALARM INTERLEAVE : ONLY
PROGRAM GROUP : OFF

**4 Use the jog dial to select the image quality (example: "SUPER FINE"), and then turn the shuttle dial clockwise.**

The cursor moves to AUDIO RECORDING.

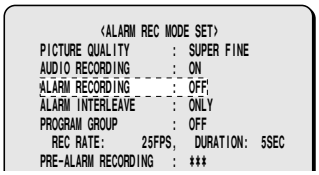
**Note:** The maximum number of images that can be recorded based on the various alarm recording settings is shown below.
**=> (30721 ALARMS CAN BE RECORDED)**

**(Image quality settings)**

- **BASIC (BQ):** (15 KB)
- **NORMAL (NQ):** (22 KB)
- **ENHANCED (EN):** (30 KB)
- **FINE (FI):** (42 KB)
- **SUPER FINE (SF):** (56 KB)

**5** **Turn the shuttle dial clockwise, use the jog dial to set audio recording (example: "ON"), and then turn the shuttle dial clockwise.**

The cursor moves to ALARM RECORDING.


‹ALARM REC MODE SET›
PICTURE QUALITY : SUPER FINE
AUDIO RECORDING : ON
ALARM RECORDING : OFF
ALARM INTERLEAVE : ONLY
PROGRAM GROUP : OFF
REC RATE: 25FPS, DURATION: 5SEC
PRE-ALARM RECORDING : ***

**Note:**

- Audio recording can be set when the REC RATE setting is 5 FPS or 10 FPS or more.
- When set to "**ON**", the letter "**A**" (audio recording indicator) appears in front of the REC RATE recording speed, and the maximum number of recordings appears underneath it (at the bottom of the screen).

  **=> (30200 ALARMS CAN BE RECORDED)**

**6** **Turn the shuttle dial clockwise, use the jog dial to set alarm recording mode (example: "ENABLED"), and then turn the shuttle dial.**

The cursor moves to ALARM INTERLEAVE.

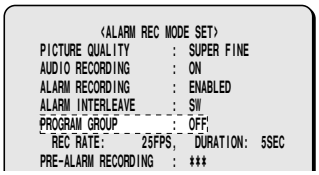
**Display example: Alarm recording settings**

- **OFF:** Alarm recording is not carried out.
- **ENABLED:** Alarm recording is always carried out regardless of the timer recording settings.
- **AL-REC ON TIMER:** Alarm recording is only carried out when timer recording is in progress.
- **AL-REC OFF TIMER:** Alarm recording is only carried out when timer recording is not in progress
- **OLY AL-RC ON TMR:** Alarm recording is carried out only during the times set by the timer. This cannot be used for normal recording.

**Note:** If alarm recording is set to a setting such as ENABLED, PRE-ALARM RECORDING setting will be enabled ("***" will change to "**OFF**").

**7** **Turn the shuttle dial clockwise, use the jog dial to select the ALARM INTERLEAVE setting (example: "SW"), and then turn the shuttle dial clockwise.**

The cursor moves to PROGRAM GROUP.


‹ALARM REC MODE SET›
PICTURE QUALITY : SUPER FINE
AUDIO RECORDING : ON
ALARM RECORDING : ENABLED
ALARM INTERLEAVE : SW
PROGRAM GROUP : OFF
REC RATE: 25FPS, DURATION: 5SEC
PRE-ALARM RECORDING : ***

**Display examples:**

- **ONLY:** (See page 61.)
- **SW:** (See page 61.)

**8** **Turn the shuttle dial clockwise, use the jog dial to set the recording speed (example: "8.33"), and then turn the shuttle dial clockwise.**

DURATION of "**5SEC**" flashes.

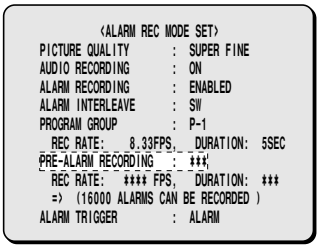
**Note:** When the recording speed is selected, the maximum number of recordings appears underneath it (at the bottom of the screen).
**=> (20480 ALARMS CAN BE RECORDED)**

**9** **Use the jog dial to set the recording time duration (example: "5"), and then turn the shuttle dial.**

The cursor moves to PRE-ALARM RECORDING.

**Display examples:**

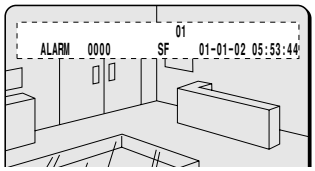
- **5S – 15M:** The same duration has been set for all cameras.
- **CC:** Operates while an alarm is being received (minimum 1 second).
- **INDIV:** Individual durations have been set for each camera.


‹ALARM REC MODE SET›
PICTURE QUALITY : SUPER FINE
AUDIO RECORDING : ON
ALARM RECORDING : ENABLED
ALARM INTERLEAVE : SW
PROGRAM GROUP : P-1
REC RATE: 8.33FPS, DURATION: 5SEC
PRE-ALARM RECORDING : ***
REC RATE: **** FPS, DURATION: ***
=> (16000 ALARMS CAN BE RECORDED )
ALARM TRIGGER : ALARM

**10** **Press the EXIT/OSD button.**

The display returns to the normal screen.

Alarm settings appear in the operating display section. When an alarm is triggered, the number of alarms is displayed.



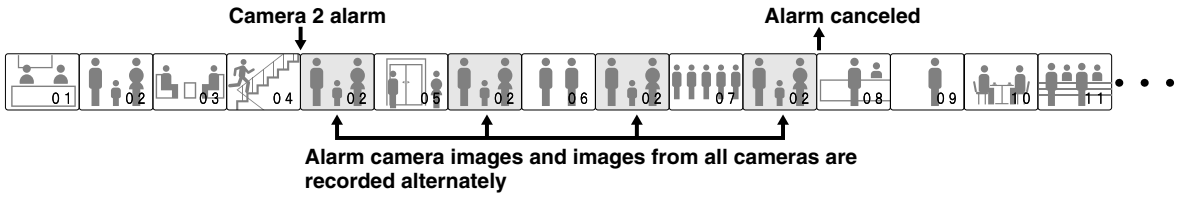

**Note:** If another alarm occurs at another channel while alarm recording is in progress, the alarm count increases and the alarms are treated as two alarms. If another alarm occurs at the same channel, the alarms are treated as a single alarm (the alarm count is not increased).

# RECORDING SETTING

## A SW1

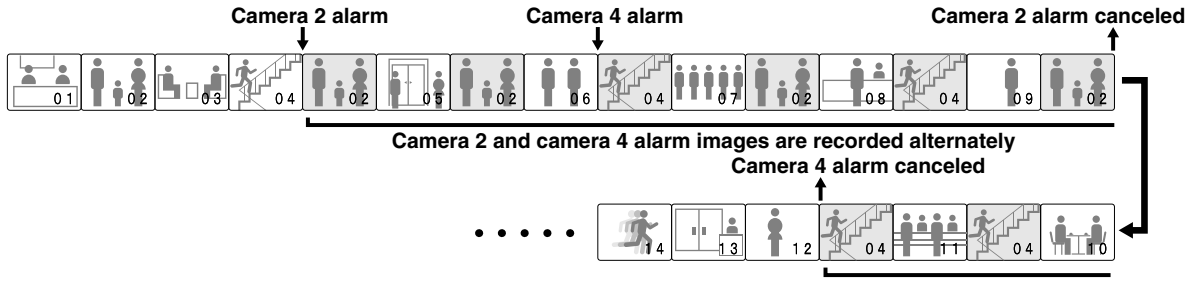
Recording alternates between images from the cameras where an alarm has occurred and images from all cameras that are connected. If alarms have occurred at more than one camera, images from the cameras where an alarm has occurred and images from all cameras are alternately recorded one image at a time.

- **Recording pattern if an alarm occurs at camera 2**




**Note:** If PROGRAM GROUP as been specified, the images from the cameras that are set to "**ON**" on that program will be recorded alternately.

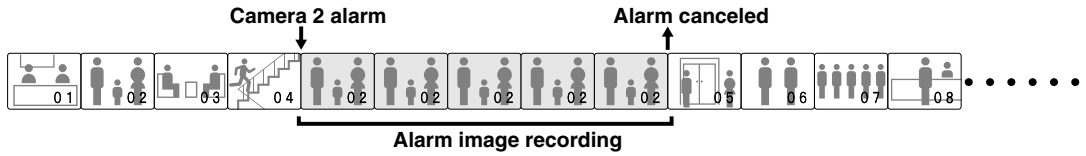
- **Recording pattern if alarms occur at two or more cameras (example: cameras 2 and 4)**


Camera 2 alarm
Camera 4 alarm
Camera 2 alarm canceled
Camera 2 and camera 4 alarm images are recorded alternately
Camera 4 alarm canceled

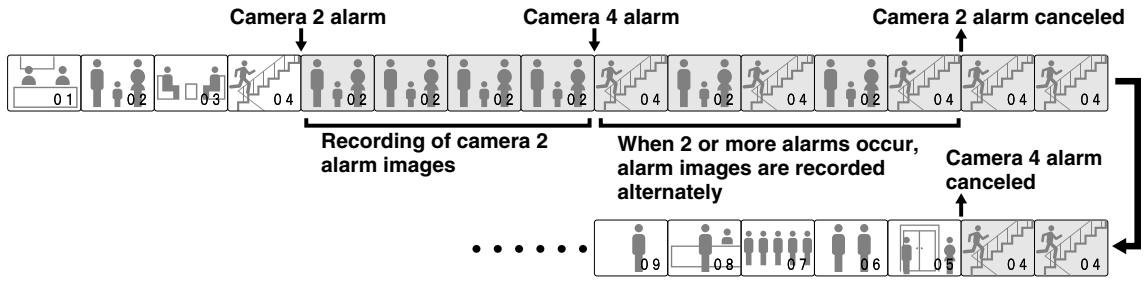
## B ONLY

Only images from the camera where the alarm is detected are recorded. If more than one alarm has been detected, the alarm images are recorded alternately.

- **Recording pattern if an alarm occurs at camera 2**

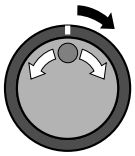



- **Recording pattern if alarms occur at two or more cameras (example: cameras 2 and 4)**


Camera 2 alarm
Camera 4 alarm
Camera 2 alarm canceled
Recording of camera 2 alarm images
When 2 or more alarms occur, alarm images are recorded alternately
Camera 4 alarm canceled

# RECORDING SETTING

## ■ Pre-alarm recording setting



```
          <ALARM REC MODE SET>
PICTURE QUALITY      : SUPER FINE
AUDIO RECORDING      : ON
ALARM RECORDING      : ENABLED
ALARM INTERLEAVE     : SW
PROGRAM GROUP        : OFF
  REC RATE:   8.33FPS,   DURATION:  5SEC
PRE-ALARM RECORDING  : ON
  REC RATE:   ****FPS,   DURATION:  ***
  =>  (01010 ALARMS CAN BE RECORDED )
ALARM TRIGGER        : ALARM
```

**1 Use the jog dial to move the cursor to ALARM RECORDING, and then turn the shuttle dial clockwise.**

"**OFF**" flashes.

**2 Use the jog dial to change the "OFF" setting to some other mode (example: ENABLED), and then turn the shuttle dial clockwise.**

The PRE-ALARM RECORDING setting changes from "✱✱✱" to "**OFF**".

The cursor moves to REC RATE.

**3 Use the jog dial to move the cursor to PRE-ALARM RECORDING, and then turn the shuttle dial clockwise.**

"**OFF**" flashes.

**4 Use the jog dial to change from "OFF" to "ON", and then turn the shuttle dial clockwise.**

The cursor moves to REC RATE.

```
ALARM INTERLEAVE     : ONLY
PROGRAM GROUP        : OFF
  REC RATE:   8.33FPS,   DURATION: 40SEC
PRE-ALARM RECORDING  : ON
  REC RATE:   ****FPS,   DURATION:  ***
  =>  (01010 ALARMS CAN BE RECORDED )
ALARM TRIGGER        : ALARM
```

**5 Turn the shuttle dial clockwise, use the jog dial to set the recording speed, and then turn the shuttle dial clockwise.**

The cursor moves to the "**2SEC**" setting for DURATION and flashes.

**6 Use the jog dial to set the recording time duration (example: "5SEC"), and then turn the shuttle dial clockwise.**

The cursor moves to ALARM TRIGGER.

```
ALARM INTERLEAVE     : ONLY
PROGRAM GROUP        : OFF
  REC RATE:   8.33FPS,   DURATION:  5SEC
PRE-ALARM RECORDING  : ON
  REC RATE:   12.5FPS,   DURATION:  5
  =>  (01010 ALARMS CAN BE RECORDED )
ALARM TRIGGER        : ALARM
```

**7 Use the jog dial to move the cursor to PROGRAM GROUP, turn the shuttle dial clockwise, use the jog dial to set the program number (example: "P-1"), and then turn the shuttle dial clockwise.**

The cursor moves to REC RATE.

**Display examples:**

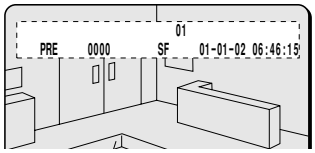
- **OFF:** Pre-alarm images from all cameras are recorded at the same recording speed.
- **P-1:** When program no. 1 is recorded
- **P-2:** When program no. 2 is recorded
- **P-3:** When program no. 3 is recorded
- **P-4:** When program no. 4 is recorded

**Note:** When pre-alarm recording has been set, the pre-alarm recording speed and the recording speed for normal recording will be fixed at 15 FPS. A warning screen appears to verify confirm this, so select "**YES**".

**8 Press the EXIT/OSD button.**

The display returns to the normal screen.

"**PRE**" appears in the operating display section. When an alarm is triggered, the display switches to "**ALARM**".



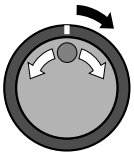

**Note:**

- Pre-alarm recording continues for the length of time specified by the DURATION setting before an alarm signal is input. When playing back images that have been recorded during pre-alarm recording, use the alarm search (**SEARCH** button) operations. Images will be played back from the point that the alarm occurred, so use the shuttle operations to carry out rewind playback.
- If carrying out normal alarm recording and pre-alarm recording at the same time, no audio signals will be recorded with the pre-alarm recording images.

# RECORDING SETTING

## ■ Alarm trigger setting

**1 Use the jog dial to move the cursor to the ALARM TRIGGER setting.**



```
          <ALARM REC MODE SET>
PICTURE QUALITY      :  SUPER FINE
AUDIO RECORDING      :  ON
ALARM RECORDING      :  ENABLED
ALARM INTERLEAVE     :  ONLY
PROGRAM GROUP        :  OFF
  REC RATE:    8.33FPS,   DURATION:  5SEC
PRE-ALARM RECORDING  :  ON
  REC RATE:    12.5FPS,   DURATION:  5
  =>  (01010 ALARMS CAN BE RECORDED )
ALARM TRIGGER        :  ALARM
```

**2 Turn the shuttle dial clockwise, use the jog dial to select the method of detecting intruders (example: "SENSOR"), and then turn the shuttle dial clockwise.**

The cursor moves to PICTURE QUALITY.

```
ALARM INTERLEAVE     :  ONLY
PROGRAM GROUP        :  OFF
  REC RATE:    8.33FPS,   DURATION:  5SEC
PRE-ALARM RECORDING  :  ON
  REC RATE:    12.5FPS,   DURATION:  5
  =>  (01010 ALARMS CAN BE RECORDED )
ALARM TRIGGER        :  SENSOR
```

**Display examples: Alarm recording trigger settings**

- **ALARM:** Alarm recording is carried out when an external alarm (when a switch is connected to the ALARM IN terminals at the rear of the digital video recorder for open/close operation occurs).
- **SENSOR:** Alarm recording is only carried out when the motion sensor detects a moving object. Refer to motion sensor settings. (See page 67.)
- **ALARM AND SENSOR:** Alarm recording is carried out when there is a response from both an external alarm and a built-in motion sensor.
- **ALARM OR SENSOR:** Alarm recording is carried out when there is a response from either an external alarm or a built-in motion sensor.

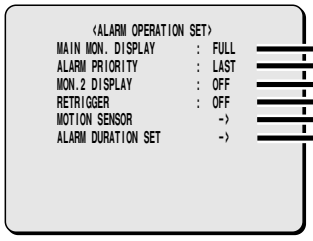
**Note:**

- MOTION SENSOR settings must be made if SENSOR, ALARM AND SENSOR or ALARM OR SENSOR is selected.
- The digital video recorder's built-in motion sensor cannot be used if a multiplexer is connected to the digital video recorder.
- If using the built-in sensor of a multiplexer, the alarm output should be directed to the alarm input of the digital video recorder in order to record alarms.
- If you stop recording while alarm recording that has been triggered by a motion sensor is in progress, move the cursor to the ALARM OPERATION SET setting in the menu screen and then turn the shuttle dial clockwise. The motion sensor screen appears, so use this screen to change the LEVEL setting to "**OFF**".

# RECORDING SETTING

## G ALARM OPERATION SET menu

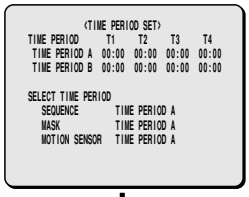
**Sub-menu**

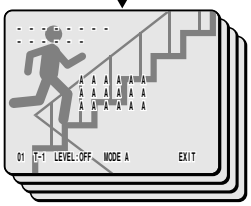

〈ALARM OPERATION SET〉
MAIN MON. DISPLAY : FULL
ALARM PRIORITY : LAST
MON.2 DISPLAY : OFF
RETRIGGER : OFF
MOTION SENSOR ->
ALARM DURATION SET ->
Sets whether alarm images are displayed as a single screen or in a split screen on the main monitor.
Changes the settings for recording double alarms.
Allows alarm recording images to be displayed on monitor 2.
Changes the RETRIGGER setting.
Changes the motion sensor alarm settings.
Changes the sensor settings on the monitor.
01 T-1 LEVEL:OFF MODE A EXIT
Set the alarm duration for each camera.

**Using the timer function for recording**

**Setting motion sensors so that when a suspicious individual is detected, alarm recording is carried out for the time period set for timer recording.**

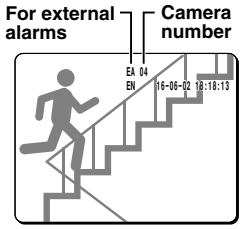
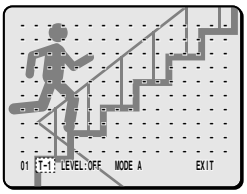
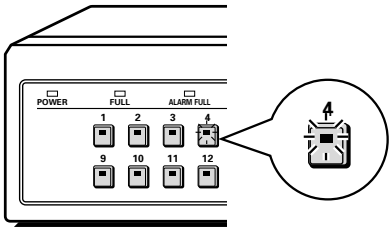
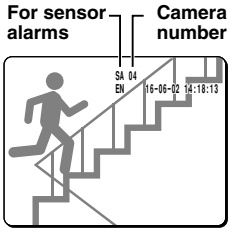
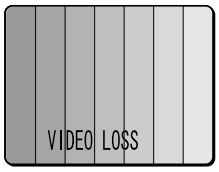
**TIME PERIOD SET settings (See page 46.)**


〈TIME PERIOD SET〉
TIME PERIOD T1 T2 T3 T4
TIME PERIOD A 00:00 00:00 00:00 00:00
TIME PERIOD B 00:00 00:00 00:00 00:00
SELECT TIME PERIOD
SEQUENCE TIME PERIOD A
MASK TIME PERIOD A
MOTION SENSOR TIME PERIOD A



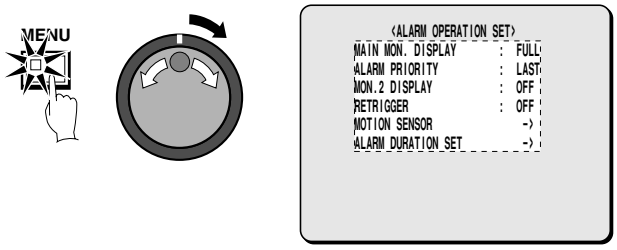
# RECORDING SETTING

There are three types of alarm detection: external alarm, motion sensor alarm and signal loss alarm.
Alarm settings include specifying the period during which the buzzer will continue to sound and the method of recording images during each alarm.

| Type of alarm | Digital video recorder operation | Monitor screen display |
|---|---|---|
| **External alarm detection**<br>By setting up a door switch, etc. connected to the alarm input connecter at the rear of this unit, an intruder opening or closing the door can be detected. | When an alarm occurs, the indicator on the camera select button for the camera that produced the alarm (example: 4) will start flashing. | The image from the camera that produced the alarm (example: 4) will be displayed and “EA” (external alarm) will appear on the screen.<br>  |
| **Motion sensor alarm detection**<br>By setting the sensitivity of a motion sensor built into this unit an intruder can be detected on the monitor screen and the buzzer will sound.<br>  |  | The image from the camera that produced the alarm (example: 4) will be displayed and “SA” (sensor alarm) will appear on the screen.<br>  |
| **Signal loss detection alarm**<br>In the case of a camera signal being suddenly interrupted due to an accident, etc., a setting can be made to record the image immediately prior to the interruption (a still image or a test pattern). | | When an alarm occurs, the screen changes to a still image or a test pattern, and the video loss detection alarm display (VIDEO LOSS) will appear on the screen.<br> <br>**Still image**<br>  <br>**Test pattern** |

# RECORDING SETTING

## ■ Alarm display settings

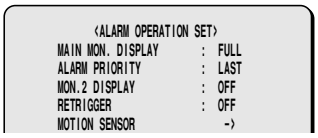



**1 Press the MENU button to select RECORD SET, and then turn the shuttle dial clockwise.**

The RECORD SET sub-menu appears, and the cursor is positioned at RECORDING AREA SET.

**2 Use the jog dial to move the cursor to ALARM OPERATION SET, and then turn the shuttle dial clockwise.**

The ALARM OPERATION SET sub-menu appears, and the cursor is positioned at MAIN MON. DISPLAY.




**3 Turn the shuttle dial clockwise.**

"**FULL**" flashes.

**Display examples:**

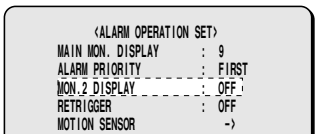
- **FULL:** When an alarm is detected, images from the channel that received the alarm are displayed on the main monitor as a single screen.
- **16:** When an alarm is detected, images are displayed in a 16-screen display.
- **9:** When an alarm is detected, images are displayed on the main monitor in a 9-screen display.
- **NC:** The main monitor display does not change when an alarm is detected.

**4 Use the jog dial to select the display mode (example: 9), and then turn the shuttle dial clockwise.**

The cursor moves to ALARM PRIORITY.

**5 Turn the shuttle dial clockwise, use the jog dial to select the ALARM PRIORITY setting (example: FIRST), and then turn the shuttle dial clockwise.**

The cursor moves to MON.2 DISPLAY.




**Display examples:**

- **LAST:** When more than one alarm is detected at the same time, the alarms are given priority starting from the last alarm received.
- **FIRST:** When more than one alarm is detected at the same time, only the first alarm received is displayed, and images for subsequent alarms are not displayed.
- **SWITCH:** When more than one alarm is detected at the same time, the alarm images for each alarm are displayed alternately at 1-second intervals.

**6 Use the jog dial to select the MON.2 DISPLAY setting (example: OFF), and then turn the shuttle dial clockwise.**

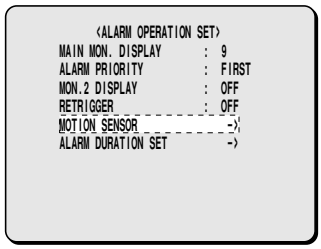
The cursor moves to RETRIGGER.

**Display examples:**

- **ON:** When an alarm is detected, the alarm images are displayed on monitor 2.
- **OFF:** Alarm images are not displayed on monitor 2.

**7 Turn the shuttle dial clockwise, use the jog dial to change the RETRIGGER setting (example: ON), and then turn the shuttle dial clockwise.**

The cursor moves to MOTION SENSOR.




**Display examples:**

- **ON:** The duration of alarm recording is extended if an alarm is received from the same channel for which alarm recording is currently in operation.
- **OFF:** The alarm duration is not extended even if another alarm is received from the same channel.

**8 Press the EXIT/OSD button.**

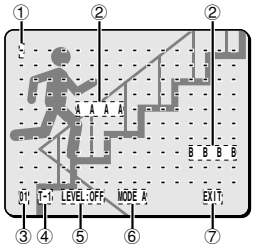
The display returns to the normal screen.

# RECORDING SETTING

## ■ MOTION SENSOR setting

**(default setting: OFF)**

To display motion sensors on each camera image and make settings for intruder detection. The motion sensors work as shown below.




① **Motion sensor off status**

When the jog dial is turned, the cursor moves.

② **Sensor setting**

When the shuttle dial is turned clockwise, the setting changes to "**A**", "**B**" or "**–**".
Set to "**A**" or "**B**" in accordance with the desired sensor detection position.

③ **Camera display**

When the camera select button is pressed, the camera number changes. Use the camera select button to select cameras that are set for motion sensor alarms.

④ **Setting motion sensor operating times**

Use TIME PERIOD SET to select specified time zones (T-1 to 4). This will enable an alarm to be detected by motion sensors with specified sensitivities only in the selected time zones (See page 46).

⑤ **Motion sensor sensitivity setting**

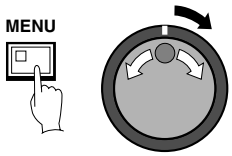
- This sets the sensor sensitivity.
  1, 2, 3, 4 ... (the higher the number, the lower the sensitivity), OFF

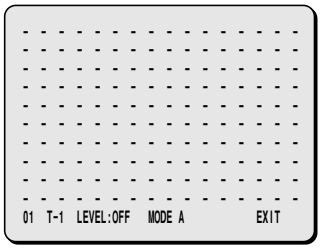
⑥ **Motion sensor detection setting**

- **A:** A motion sensor alarm is generated when a moving object is detected at A.
- **A AND B:** When an object is detected touching both sensors at point A and point B, a motion sensor alarm will be triggered.
- **A AND NB:** With point A aligned on an important item (object) and point B aligned on a non-moving object, a motion sensor alarm will be triggered when the object at point A is detected, without reacting to changes such as the brightness of the whole screen.
- **B TO A:** A motion sensor alarm will be triggered if there is any change in the movement of a subject passing from point A to point B.
- **C:** A motion sensor alarm is generated when the whole screen area changes uniformly. This results in a reaction at times such as when the camera is sprayed with something. (Sensor settings are not required.)

⑦ **EXIT**

When this is selected, the display returns to the previous screen.




**1** **After changing the TIMER A and TIMER B settings in the TIME PERIOD SET menu, select MOTION SENSOR. (See page 47.)**

**2** **Press the MENU button to select RECORD SET, and then turn the shuttle dial clockwise.**

The RECORD SET sub-menu appears, and the cursor is positioned at RECORDING AREA SET.

**3** **Use the jog dial to move the cursor to ALARM OPERATION SET, and then turn the shuttle dial clockwise.**

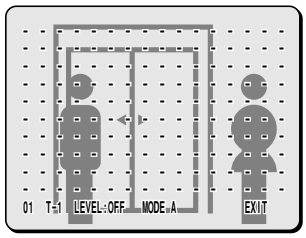
The ALARM OPERATION SET sub-menu appears, and the cursor is positioned at MAIN MON. DISPLAY.

**4** **Use the jog dial to move the cursor to MOTION SENSOR, and then turn the shuttle dial clockwise.**

The motion sensor setting screen is displayed.

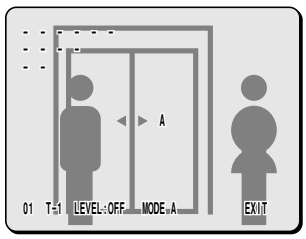
**5** **Press a camera select button (example: 5).**

Select the camera number for the camera to use for setting the motion sensor.




**6** **Use the jog dial to move the cursor to the center of the screen, and then turn the shuttle dial clockwise so that "A" is displayed.**

Use the same procedure to display "**A**" in the center of the screen.



**7** **Use the jog dial to move the cursor to T-1, and then turn the shuttle dial clockwise to set "T-2".**

01 T-2 LEVEL:OFF MODE A EXIT

**8** **Use the jog dial to move the cursor to the "OFF" setting for LEVEL, and then turn the shuttle dial clockwise to set the sensitivity to "2".**

01 T-2 LEVEL:2 MODE A EXIT

**9** **Use the jog dial to move the cursor to MODE, and then turn the shuttle dial clockwise to select "A".**

01 T-2 LEVEL:5 MODE A EXIT

**10** **Use the jog dial to move the cursor to EXIT, and then turn the shuttle dial clockwise.**

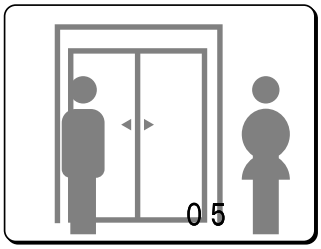
The setting is then complete.

01 T-2 LEVEL:5 MODE A EXIT

**11** **Press the EXIT/OSD button.**

The display returns to the camera image display screen.

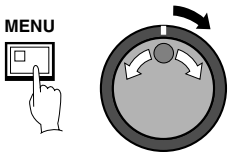
If a suspicious person appears in the center of the images from camera 5, an alarm will be triggered.

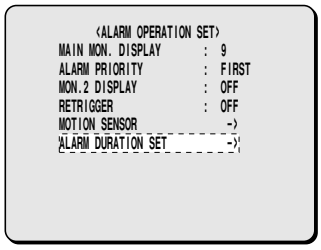



**Note:** You can check the sensitivity in the setting screen. When an alarm is detected, the buzzer (a beeping noise) sounds. If the sensitivity is too strong, an alarm can be triggered by variations in light. Make the setting that is appropriate for the area being monitored.

## ■Setting the alarm duration

You can set the alarm duration separately for each camera. Separate settings are only possible when DURATION in the ALARM REC MODE SET menu is set to "**INDIV**". (See page 59.)




**1** **Press the MENU button to select RECORD SET, and then turn the shuttle dial clockwise.**

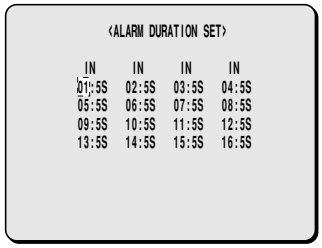
The RECORD SET sub-menu appears, and the cursor is positioned at RECORDING AREA SET.

**2** **Use the jog dial to move the cursor to ALARM OPERATION SET, and then turn the shuttle dial clockwise.**

The ALARM OPERATION SET sub-menu appears, and the cursor is positioned at MAIN MON. DISPLAY.

**3** **Use the jog dial to move the cursor to ALARM DURATION SET, and then turn the shuttle dial clockwise.**

The ALARM DURATION SET sub-menu appears, and the cursor is positioned at 01 (camera 1).



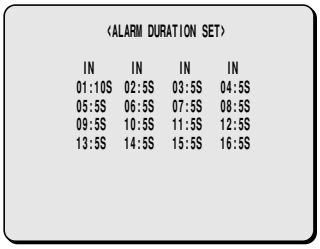

**4** **Turn the shuttle dial clockwise, use the jog dial to set the alarm duration (example: 10S), and then turn the shuttle dial clockwise.**

When an alarm is received at camera 1, the alarm will be received for 5 seconds. The cursor then moves to camera 2.

**Display examples:**

- **5S – 15M:** The same duration has been set for all cameras.
- **CC:** Operates while an alarm is being received (minimum 1 second).

**5** **Repeat the above procedure to set the alarm duration for other cameras.**




**6** **Press the EXIT/OSD button.**

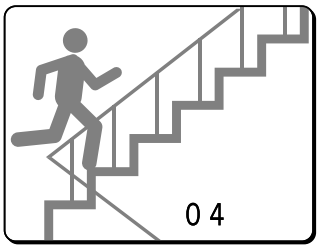
The display returns to the normal screen.

## ■ Resetting an alarm

### ☞ When images from the camera where the alarm was detected are appearing in a single-screen display

**1** **Press the camera select button for the camera that is being shown in the single-screen display for approximately 3 seconds.**

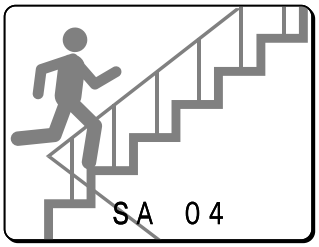
The alarm will then be canceled.




### ☞ When images from the camera where the alarm was detected are displayed in a multiple-screen

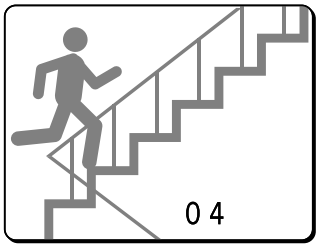
**1** **Press the camera select button for the camera that is showing the alarm.**

The alarm images will appear in a single-screen display.



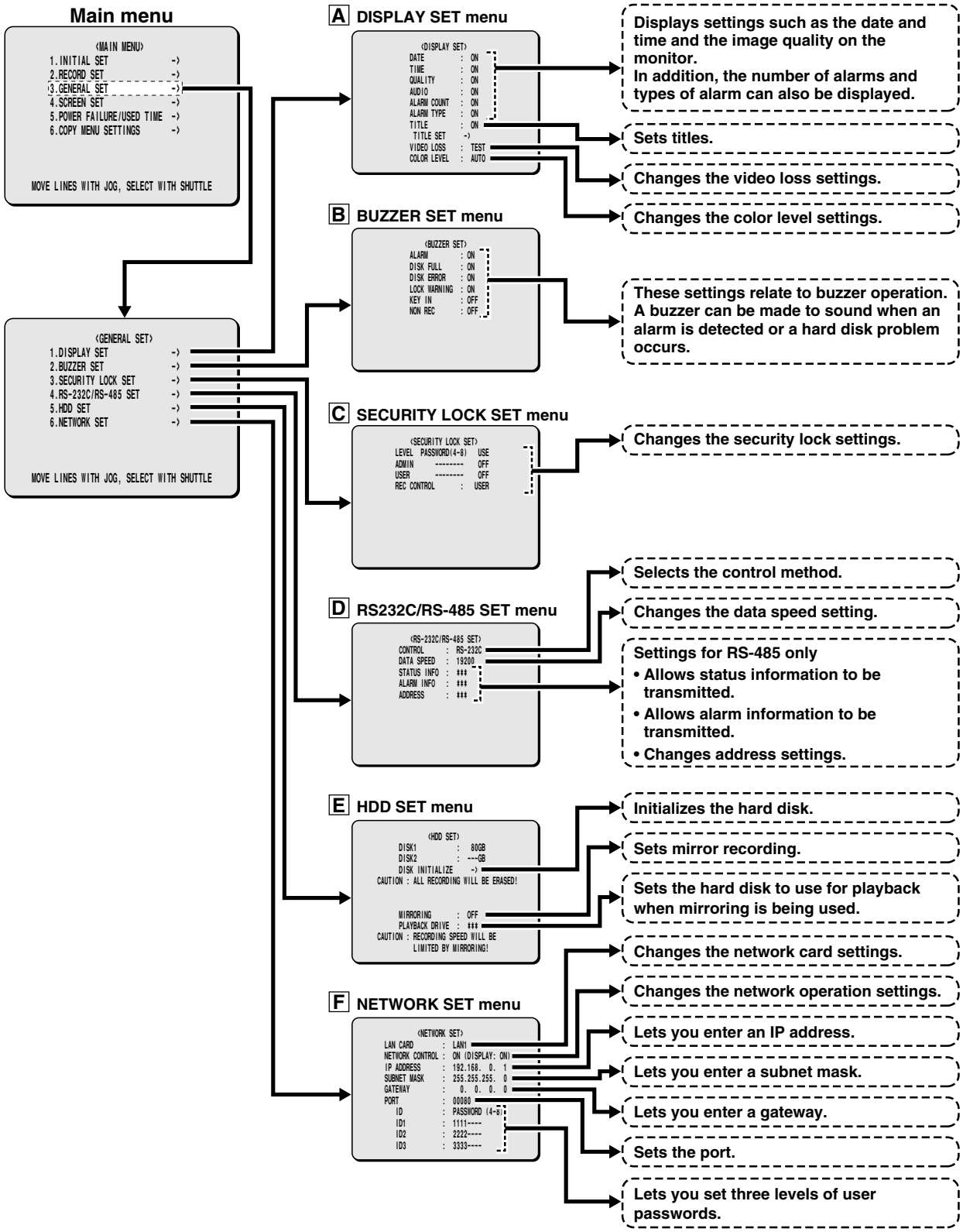

**2** **Press the camera select button again for approximately 3 seconds.**

The alarm will then be canceled.




**Note:** Alarms can also be reset by using the **ALARM RESET** button on the rear panel of the digital video recorder.

# GENERAL SETTING


Main menu
〈MAIN MENU〉
1.INITIAL SET ->
2.RECORD SET ->
3.GENERAL SET ->
4.SCREEN SET ->
5.POWER FAILURE/USED TIME ->
6.COPY MENU SETTINGS ->
MOVE LINES WITH JOG, SELECT WITH SHUTTLE
〈GENERAL SET〉
1.DISPLAY SET ->
2.BUZZER SET ->
3.SECURITY LOCK SET ->
4.RS-232C/RS-485 SET ->
5.HDD SET ->
6.NETWORK SET ->
MOVE LINES WITH JOG, SELECT WITH SHUTTLE
A DISPLAY SET menu
〈DISPLAY SET〉
DATE : ON
TIME : ON
QUALITY : ON
AUDIO : ON
ALARM COUNT : ON
ALARM TYPE : ON
TITLE : ON
TITLE SET ->
VIDEO LOSS : TEST
COLOR LEVEL : AUTO
Displays settings such as the date and time and the image quality on the monitor.
In addition, the number of alarms and types of alarm can also be displayed.
Sets titles.
Changes the video loss settings.
Changes the color level settings.
B BUZZER SET menu
〈BUZZER SET〉
ALARM : ON
DISK FULL : ON
DISK ERROR : ON
LOCK WARNING : ON
KEY IN : OFF
NON REC : OFF
These settings relate to buzzer operation. A buzzer can be made to sound when an alarm is detected or a hard disk problem occurs.
C SECURITY LOCK SET menu
〈SECURITY LOCK SET〉
LEVEL PASSWORD(4-8) USE
ADMIN -------- OFF
USER -------- OFF
REC CONTROL : USER
Changes the security lock settings.
D RS232C/RS-485 SET menu
〈RS-232C/RS-485 SET〉
CONTROL : RS-232C
DATA SPEED : 19200
STATUS INFO : ###
ALARM INFO : ###
ADDRESS : ###
Selects the control method.
Changes the data speed setting.
Settings for RS-485 only
• Allows status information to be transmitted.
• Allows alarm information to be transmitted.
• Changes address settings.
E HDD SET menu
〈HDD SET〉
DISK1 : 80GB
DISK2 : ---GB
DISK INITIALIZE ->
CAUTION : ALL RECORDING WILL BE ERASED!
MIRRORING : OFF
PLAYBACK DRIVE : ###
CAUTION : RECORDING SPEED WILL BE LIMITED BY MIRRORING!
Initializes the hard disk.
Sets mirror recording.
Sets the hard disk to use for playback when mirroring is being used.
F NETWORK SET menu
〈NETWORK SET〉
LAN CARD : LAN1
NETWORK CONTROL : ON (DISPLAY: ON)
IP ADDRESS : 192.168. 0. 1
SUBNET MASK : 255.255.255. 0
GATEWAY : 0. 0. 0. 0
PORT : 00080
ID : PASSWORD (4-8)
ID1 : 1111----
ID2 : 2222----
ID3 : 3333----
Changes the network card settings.
Changes the network operation settings.
Lets you enter an IP address.
Lets you enter a subnet mask.
Lets you enter a gateway.
Sets the port.
Lets you set three levels of user passwords.

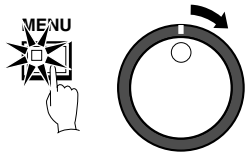
# GENERAL SETTING

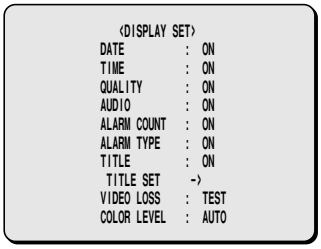
## A DISPLAY SET menu

This sets which operation displays appear on the monitor.

## ■DISPLAY SET setting

The date and time that have been set using the CLOCK SET and other settings can be displayed on the monitor screen during recording and playback. The default setting is for all displays to be "**ON**", so all setting items in this menu appear on the screen. You can turn the displays off if required.




**1 Press the MENU button to select GENERAL SET, and then turn the shuttle dial clockwise.**

The GENERAL SET sub-menu appears, and the cursor is positioned at DISPLAY SET.

**2 Turn the shuttle dial clockwise.**

The DISPLAY SET sub-menu appears, and the cursor moves to DATE.

**3 Turn the shuttle dial clockwise.**

"**ON**" flashes. If you use the jog dial to change it to "**OFF**", the date display disappears from the screen.

**4 Turn the shuttle dial clockwise.**

The cursor moves to TIME.

**5 Turn the shuttle dial clockwise.**

"**ON**" flashes. If you use the jog dial to change it to "**OFF**", the time display disappears from the screen.

**6 If necessary, follow the same procedure (steps 3 and 4) to change the ON/OFF settings.**

- **QUALITY (OFF):** The picture quality mode does not appear during recording and playback.
- **AUDIO (OFF):** The audio recording display does not appear during recording and playback.
- **ALARM COUNT (OFF):** The current number of alarms does not appear.
- **ALARM TYPE (OFF):** The type of alarm recording does not appear.
- **TITLE (OFF):** The camera title does not appear.

**Note:**

- If ALARM RECORDING in the ALARM REC MODE SET menu has been set to "**OFF**", ALARM COUNT and ALARM TYPE do not appear.
- When set to "**ON**"
  - ALARM appears in the operating display during alarm recording.
  - PRE appears in the operating display during pre-alarm recording.
  - ARCHIVE appears when playing back images in the archive area.

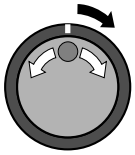
**7 Press the EXIT/OSD button.**

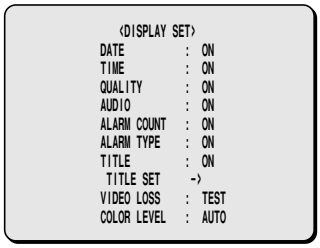
The display returns to the normal screen.

## ■Title setting

This lets you set a title for each of the cameras, such as where the camera is located, and have that title appear on the monitor.

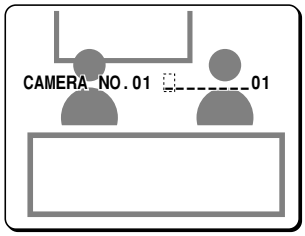
### Example: To set a title of "HALL-1F" for camera 3





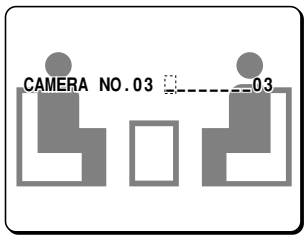

**1 Use the jog dial to move the cursor to TITLE SET, and then turn the shuttle dial clockwise.**

The normal monitoring screen will be displayed and the title setting will appear at the center of the screen.



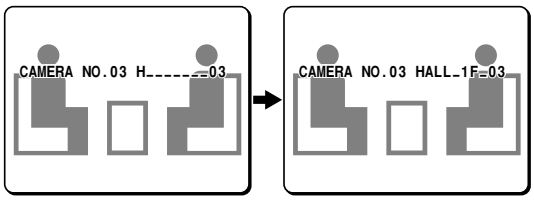

**2 Press camera select button 3.**

The images from camera 3 will appear on the monitor, and the cursor will be at the beginning of the title setting.



**3 Use the jog dial to enter "H", and then turn the shuttle dial clockwise.**

The cursor will move to the right. Repeat the above procedure to enter the title "**HALL-1F**".




**Note:** To change the title, turn the shuttle dial clockwise so that the cursor moves to the character to be changed, and then re-enter the character.

**Note: The following characters can be used in titles.**

- Alphabetic characters: A – Z
- Numerals: 0 – 9
- Symbols: -, :, ., /, *, [space]

**4 Press the EXIT/OSD button.**

The display returns to the normal screen.

## ■ VIDEO LOSS SET setting

**Use the jog dial to move the cursor to VIDEO LOSS, and then turn the shuttle dial clockwise.**

"**FREEZE**" flashes. If the camera images are lost when this setting is active, "**VIDEO LOSS !**" appears on the screen and the images are paused.

**Display examples:**

- **OFF:** When a video loss occurs, a blank screen is displayed.
- **FREEZE:** When a video loss occurs, the image that was being displayed immediately before it occurred is displayed.
- **TEST:** When a video loss occurs, the test pattern is displayed.

## ■ Color level settings

**1 Use the jog dial to move the cursor to COLOR LEVEL, and then turn the shuttle dial clockwise.**

"**AUTO**" will flash.

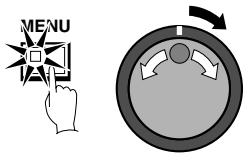
**2 Use the jog dial to select a setting (example: AUTO), and then turn the shuttle dial clockwise.**

**Display examples:**

- **AUTO:** The color level is adjusted automatically.
- **1 – 10:** The color level can be adjusted manually in 10 steps.

## B BUZZER SET setting

The buzzer can be made to sound as a warning during an alarm and when the hard disk becomes full.



**1 Press the MENU button to select GENERAL SET, and then turn the shuttle dial clockwise.**

The GENERAL SET sub-menu appears, and the cursor is positioned at DISPLAY SET.

**2 Use the jog dial to move the cursor to BUZZER SET, and then turn the shuttle dial clockwise.**

The BUZZER SET sub-menu appears, and the cursor moves to ALARM.

**3 Turn the shuttle dial clockwise.**

"**OFF**" flashes. Use the jog dial to change the setting to "**ON**" or "**OFF**".

- **ON:** The buzzer will sound when an alarm is triggered.

**4 If necessary, follow the same procedure to change the buzzer setting (ON/OFF).**

- **DISK FULL (ON):** Sets whether the buzzer sounds when disk overwriting is off and the hard disk is nearly full.
- **DISK ERROR (ON):** Sets whether the buzzer sounds when there is a hard disk error.
- **LOCK WARNING (ON):** When the security lock is engaged and a locked button is pressed, the buzzer sounds.

**Note:** When an item is set to "**ON**", the buzzer sounds twice at an interval of about 0.5 seconds.

- **KEY IN (ON):** Sets the buzzer to sound each time an operating button is pressed.
- **NON REC (ON):** Sets the buzzer to sound when recording stops by itself and when another person deliberately stops recording.

**5** **Press the EXIT/OSD button.**
The display returns to the normal screen.

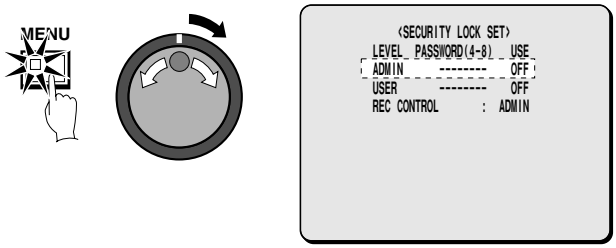
## C SECURITY LOCK SET setting

Passwords for this digital video recorder can be set by the Administrator or the User or both. Setting passwords enables privileges to be set for recording and playback operations. After the security lock has been set, if someone other than the password setter touches an operating button on the digital video recorder, the buzzer will sound and a password must be entered. Therefore, be sure to make a note of the password.

## ■ Operating privileges and security lock

### ☞ Administrator password setting

**Example: To set the password to "123456AB"**




**1** **Press the MENU button to select GENERAL SET, and then turn the shuttle dial clockwise.**
The GENERAL SET sub-menu appears, and the cursor is positioned at DISPLAY SET.

**2** **Use the jog dial to move the cursor to SECURITY LOCK SET, and then turn the shuttle dial clockwise.**
The SECURITY LOCK SET sub-menu appears, and the cursor moves to ADMIN.

**Note:**
- "**LEVEL PASSWORD (4-8) USE**" is a title and cannot be changed.
- If ADMIN is set to "**OFF**", the user password cannot be set.
- The password can consist of between four and eight alphanumeric characters.

**3** **Turn the shuttle dial clockwise.**
The first password entry bar flashes.

ADMIN -------- OFF

**4** **Use the jog dial to display "1", and then turn the shuttle dial.**
The second password entry bar flashes.
- The characters that can be used in the password are: 0, 1, ... 9, A, B, C, ... Z

**Note:** This can also be set using the numeric keys. (See page 43.)

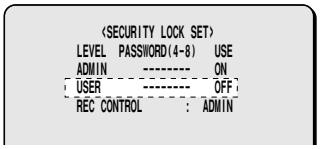
ADMIN 1------- OFF

**5** **Use the jog dial to display "2", and then turn the shuttle dial.**
The third password entry bar flashes.

ADMIN 11------ OFF

**6** **Repeat this procedure to continue entering "3456AB", and then turn the shuttle dial clockwise.**
The cursor moves to "**OFF**" and flashes.

**7** **Use the jog dial to change the setting to "ON", and then turn the shuttle dial clockwise.**
The cursor moves to USER.



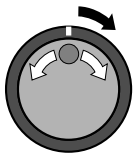

**8** **Set User password.**
Carry out ☞ **User password setting**. If the User setting is not to be done, this is complete.
Use the jog dial to move the cursor to REC CONTROL and carry out **the recording and playback operating privilege setting**. (See page 74.)

**Note:** If setting a 4-character password, leave the 5th character as "-" and then turn the shuttle dial clockwise.

# GENERAL SETTING

### ☞ User password setting

**Example: To set the password to “AB123456”**



**1 Use the jog dial to move the cursor to USER, and then turn the shuttle dial clockwise.**

The first password entry bar flashes.

USER -------- OFF

**2 Use the jog dial to display “A”, and then turn the shuttle dial.**

The second password entry bar flashes.

- The characters that can be used in the password are: 0, 1, ... 9, A, B, C, ... Z

USER A------- OFF

**3 Use the jog dial to display “B”, and then turn the shuttle dial.**

The third password entry bar flashes.

USER AB------ OFF

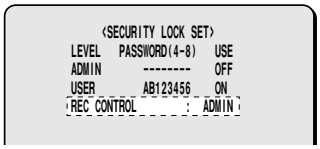
**4 Repeat this procedure to continue entering “123456”, and then turn the shuttle dial clockwise.**

The cursor moves to “**OFF**” and flashes.

**5 Use the jog dial to change the setting to “ON”, and then turn the shuttle dial clockwise.**

The cursor moves to REC CONTROL.

Carry out **the recording and playback operating privilege setting**.

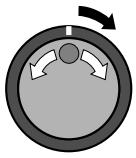


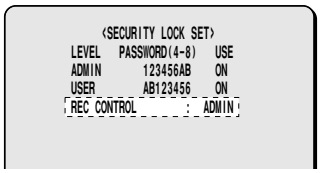

### ☞ Recording and playback operating privilege setting

#### ■ Selection of operating privilege

The available operations vary depending on the ON/OFF and ADMIN/USER settings.

| Selection conditions | Details of operation |
|---|---|
| LEVEL PASSWORD(4-8) USE<br>ADMIN 123456AB ON<br>USER AB123456 ON<br>REC CONTROL : ADMIN | All operations are locked. When the user password is entered at the password entry screen, only playback operations can be carried out. When the Administrator password is entered, all operations can be carried out. |
| ADMIN 123456AB ON<br>USER AB123456 ON<br>REC CONTROL : USER | All operations are locked. When the user password is entered at the password entry screen, only playback and recording operations can be carried out. When the Administrator password is entered, all operations can be carried out. |
| ADMIN 123456AB ON<br>USER -------- OFF<br>REC CONTROL : ADMIN | Recording and menu operations are locked. Playback operations are not locked. When the Administrator password is entered, all operations can be carried out. |
| ADMIN 123456AB ON<br>USER -------- OFF<br>REC CONTROL : USER | Menu operation is locked. Recording and playback operations are not locked. When the Administrator password is entered at the password entry screen, all operations can be carried out. |






**1 Use the jog dial to move the cursor to REC CONTROL.**

**2 Turn the shuttle dial clockwise, and then use the jog dial to select “ADMIN” or “USER”.**

This completes the setting.

**3 Press the EXIT/OSD button.**

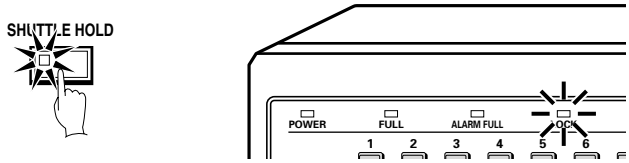
The display returns to the normal screen.

# GENERAL SETTING

### ☞ Security lock setting

**1 At the normal monitoring screen, press and hold the SHUTTLE HOLD button for approximately 3 seconds.**

The LOCK indicator at the front panel illuminates and the buzzer sounds. The security lock is then set.




**2 To check the security lock, press the REC/STOP button or the MENU button.**

The password entry screen appears.

The screen display disappears after 5 seconds.

**Note:**

**<Canceling the security lock>**

If you press the **REC/STOP**, **MENU** or **PLAY/STOP** button, the password request screen appears. Enter the password. Numerals only can be entered sing the camera select buttons.

**3 Use the jog dial and the shuttle dial to enter the password, and then turn the shuttle dial clockwise once more.**

The LOCK indicator goes off and the display returns to the normal screen.

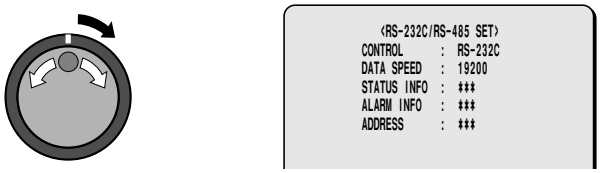
## D RS-232C/RS-485 SET SETTING

### ■ RS-232C/RS-485 SET setting

Settings related to RS-232C and RS-485 serial communication.

**1 Use the jog dial to select CONTROL, and then turn the shuttle dial clockwise.**

"**RS-232C**" flashes. Use the jog dial to select either "**RS-232C**" or "**RS-485**".

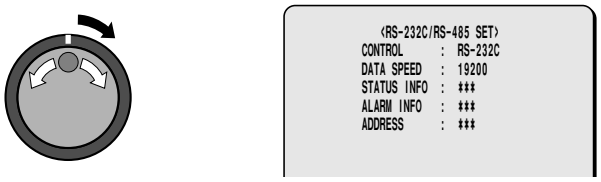



### ■ RS-232C Selection

For connection of the RS-232C terminal of the digital video recorder to a computer, please use a special RS-232C cable (sold separately). (See page 7.)

**1 Turn the jog dial to select RS-232C, and then turn the shuttle dial clockwise.**

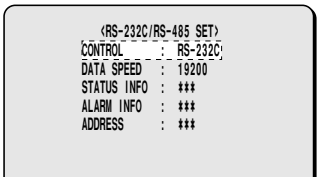
The cursor moves to DATA SPEED.




**2 Turn the shuttle dial clockwise, use the jog dial to select a communication speed (example: "19200"), and then turn the shuttle dial clockwise.**

This completes the setting and the cursor moves to CONTROL.

- **Communication speeds:** 2400, 4800, 9600 and 19200



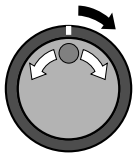

**3 Press the EXIT/OSD button.**

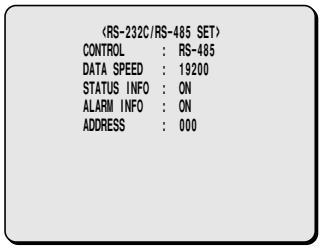
The display returns to the normal screen.

# GENERAL SETTING

## ■RS-485 Selection

Connect the RS-485 control terminals (A and B) of the digital video recorder in series with other devices such as a controller, multiplexer or another digital video recorder. (See page 9.)






**1 Turn the shuttle dial clockwise, use the jog dial to select RS-485, and then turn the shuttle dial clockwise.**

The cursor moves to DATA SPEED.

The STATUS INFO, ALARM INFO and ADDRESS settings can be changed.

**2 Turn the shuttle dial clockwise, use the jog dial to select a communication speed (example: "19200"), and then turn the shuttle dial clockwise.**

- **Communication speeds:** 2400, 4800, 9600 and 19200

The cursor moves to STATUS INFO.

**3 Turn the shuttle dial clockwise, use the jog dial to select status information (example: "ON"), and then turn the shuttle dial clockwise.**

- **ON:** Status information can be transmitted via the RS-485 line.

The cursor moves to ALARM INFO.

**4 Turn the shuttle dial clockwise, use the jog dial to select alarm information (example: "ON"), and then turn the shuttle dial clockwise.**

- **ON:** Alarm information can be transmitted via the RS-485 line.

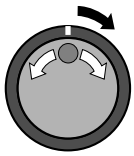
The cursor moves to ADDRESS.

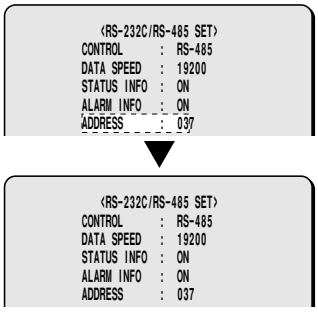
**5 Turn the shuttle dial clockwise, use the jog dial to select an address (example: "37"), and then turn the shuttle dial clockwise.**

This completes the setting and the cursor moves to CONTROL.

**Note:** The range of valid addresses for this unit is from 0 to 127. If more than one digital video recorder is connected, be careful that same addresses are not repeated.

- **Address item:** 0 to 127





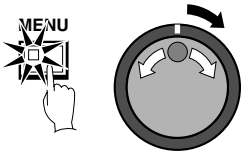

**6 Press the EXIT/OSD button.**

The display returns to the normal screen.

## E HDD SET setting

This displays the hard disk capacity for disk 1 (standard) and disk 2 (standard or added).

**Note:** Before adding (or initializing) a hard disk, it is important to make a backup of recorded images onto a separate medium such as a DAT or CD-R disc.



‹HDD SET›
DISK1 : 80GB
DISK2 : ---GB
DISK INITIALIZE ->
CAUTION : ALL RECORDING WILL BE ERASED!
MIRRORING : OFF
PLAYBACK DRIVE : ###
CAUTION : RECORDING SPEED WILL BE LIMITED BY MIRRORING!

## ■Hard disk initialization

**1 Press the MENU button to select GENERAL SET, and then turn the shuttle dial clockwise.**

The GENERAL SET sub-menu appears, and the cursor is positioned at DISPLAY SET.

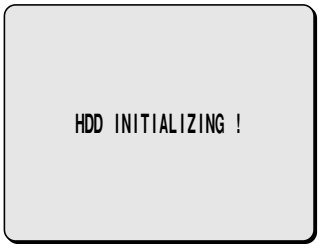
**2 Use the jog dial to move the cursor to HDD SET, and then turn the shuttle dial clockwise.**

The HDD SET sub-menu appears, and the cursor moves to DISK INITIALIZE.

**3** **Turn the shuttle dial clockwise.**
A WARNING screen appears and then "**NO**" flashes.

〈WARNING〉
THIS CHANGE WILL INITIALIZE THE DISK.
ALL RECORDING WILL BE ERASED.
ARE YOU SURE ?
NO
CHANGE LINES WITH JOG. SELECT WITH SHUTTLE

**4** **Use the jog dial to select YES, and then turn the shuttle dial.**
The "**HDD INITIALIZING!**" screen appear and the hard disk is initialized. Then the display is returned to the HDD SET screen.




**5** **Press the EXIT/OSD button.**
The display returns to the normal screen.

## ■ Adding a hard disk

Consult the place of purchase if you would like to add a hard disk. If adding a hard disk, use an additional hard disk unit (sold separately).

**Note:** If adding another hard disk, be sure to initialize the hard disks. When this is done, both hard disks will be initialized, so that any existing data on the original hard disk will be cleared.

**Reference: HDD SET screen**

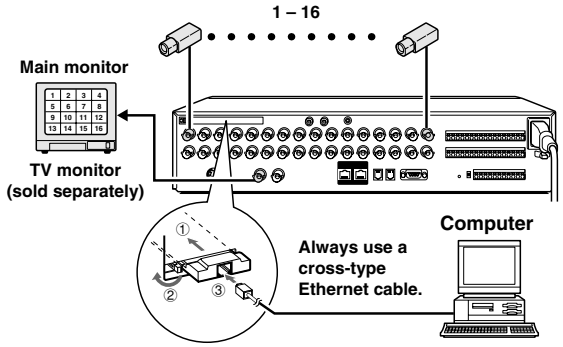
- **MIRRORING:** When a hard disk is added, or if a 160 GB hard disk is installed, it is possible to record the same images on two hard disks. This means that even if an image write error occurs you will be able to read from an area where there is no write error.
- **PLAYBACK DRIVE:** After MIRRORING has been set, you will be able to specify which of the two hard disks is to be used for reading the recorded image.
  With mirroring setting, if an error has occurred in the playback image, switch from the hard disk in current use (DISK1) to (DISK2).

# F NETWORK SET SETTING

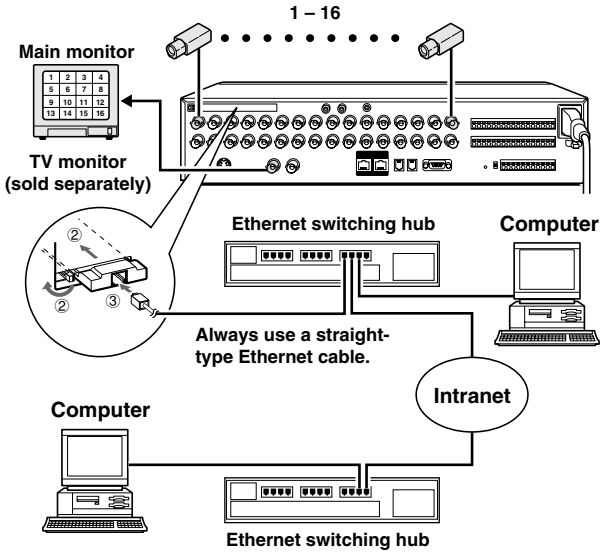
## ■ Network connection

**Insert a recommended commercially-available LAN card or PC card (Ethernet card) into the PC card slot at the rear of the digital video recorder. This will enable you to view images on this unit and make menu settings through the network (LAN) from a personal computer.**

- **When connecting directly to the computer (without using an Ethernet hub)**

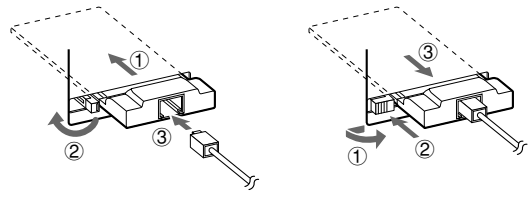



- **When connecting via an intranet (using an Ethernet hub)**




**Inserting the recommended LAN card**

**(Installed)** **(Removed)**



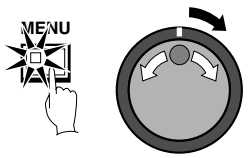
**Locking can be carried out easily by sliding the knob.**

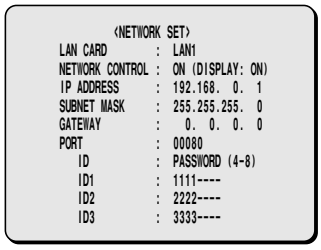
**Return the knob after unlocking.**

**Note:** The PC card slot is for 16-bit 5 V cards only.
Do not use 32-bit card bus types of card, as they may damage the PC card slot of the digital video recorder.

# GENERAL SETTING

## ■NETWORK SET setting





‹NETWORK SET›
LAN CARD : LAN1
NETWORK CONTROL : ON (DISPLAY: ON)
IP ADDRESS : 192.168. 0. 1
SUBNET MASK : 255.255.255. 0
GATEWAY : 0. 0. 0. 0
PORT : 00080
ID : PASSWORD (4-8)
ID1 : 1111----
ID2 : 2222----
ID3 : 3333----

**1 Press the MENU button to select GENERAL SET, and then turn the shuttle dial clockwise.**

The GENERAL SET sub-menu appears, and the cursor is positioned at DISPLAY SET.

**2 Use the jog dial to move the cursor to NETWORK SET, and then turn the shuttle dial clockwise.**

The NETWORK SET sub-menu appears, and the cursor moves to LAN CARD.

**3 Turn the shuttle dial clockwise.**

"**LAN1**" flashes.

Select LAN1 or LAN2 to suit the type of card being used.

- **LAN1:** COREGA FEther PCC-TXD "**CG-FEPCCTXD**" type (10/100 BASE-T)
- **LAN2:** COREGA Ether PCC-TD "**CG-EPCCTD**" type (10 BASE-T) or COREGA Ether II PCC-T (10 BASE-T)

**Note:** Correct operation cannot be guaranteed if a LAN card other than the one recommended above is used.

**4 Use the jog dial to select the LAN card (example: "LAN1"), and then turn the shuttle dial clockwise.**

The cursor moves to NETWORK CONTROL.

**5 Turn the shuttle dial clockwise and use the jog dial to select network control (example: "ON"), and then turn the shuttle dial clockwise.**

The cursor moves to IP ADDRESS.

**Display examples:**

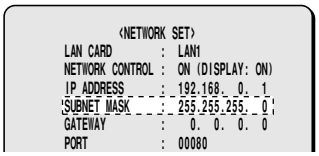
- **ON:** Network operations can be carried out.
- **OFF:** Network operations cannot be carried out.

**Note:**

- Control through the network is not possible unless NETWORK CONTROL is ON.
  When you are connected to a network, it should be switched OFF if control from the network is not required.
- If DIGITAL SERIES RECORDING in the RECORDING CONDITIONS SET menu is set to "**ON**", NETWORK CONTROL cannot be set to "**ON**".

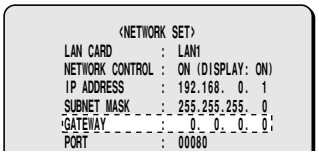
**6 Turn the shuttle dial clockwise and use the jog dial and shuttle dial to display the IP ADDRESS (example: "192.168.0.1"), and then turn the shuttle dial clockwise.**

With the final shuttle dial movement, the cursor moves to SUBNET MASK.


‹NETWORK SET›
LAN CARD : LAN1
NETWORK CONTROL : ON (DISPLAY: ON)
IP ADDRESS : 192.168. 0. 1
SUBNET MASK : 255.255.255. 0
GATEWAY : 0. 0. 0. 0
PORT : 00080

**7 Turn the shuttle dial clockwise and use the jog dial and shuttle dial to display the SUBNET MASK (example: "255.255.255.0"), and then turn the shuttle dial clockwise.**

With the final shuttle dial movement, the cursor moves to GATEWAY.


‹NETWORK SET›
LAN CARD : LAN1
NETWORK CONTROL : ON (DISPLAY: ON)
IP ADDRESS : 192.168. 0. 1
SUBNET MASK : 255.255.255. 0
GATEWAY : 0. 0. 0. 0
PORT : 00080

**8 Turn the shuttle dial clockwise and use the jog dial and shuttle dial to display the GATEWAY (example: "192.168.0.1"), and then turn the shuttle dial clockwise.**

With the final shuttle dial operation, the cursor moves to the PORT setting of "**80**".

**Note:**

- When connecting this unit to a network, check the IP ADDRESS, SUBNET MASK and GATEWAY settings with the LAN Network Administrator.
- Settings such as the IP address can also be entered using the camera select buttons.

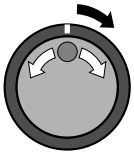
**9 Turn the shuttle dial clockwise, use the jog dial to enter the PORT number (example: "90"), and then turn the shuttle dial clockwise.**

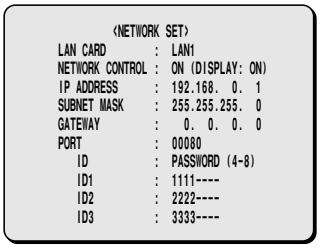
You can set any port number you wish within the range of 1 to 65535.

## PASSWORD SET setting

For network connection there are three access levels, each of which has a password. Each password can consist of a combination of 4 to 8 alphanumeric symbols.

**Note:** The cursor cannot be moved to ID or PASSWORD (4-8).




<NETWORK SET>
LAN CARD : LAN1
NETWORK CONTROL : ON (DISPLAY: ON)
IP ADDRESS : 192.168. 0. 1
SUBNET MASK : 255.255.255. 0
GATEWAY : 0. 0. 0. 0
PORT : 00080
ID : PASSWORD (4-8)
ID1 : 1111----
ID2 : 2222----
ID3 : 3333----

### Example: Set AB123456 as the ID1 password.

**1 Use the jog dial to move the cursor to ID1, and then turn the shuttle dial clockwise.**

The initial digit 1 of the password entry flashes.

- The characters that can be used in the password are: 0, 1 ... 9, A, B ... Z

**Note:**

- **ID1:** This level can only observe a live image through the network.
- **ID2:** This level can observe a live image and play back and search recorded images through the network.
- **ID3:** This level allows all digital video recorder operations and settings to be carried out.

**2 Use the jog dial to display "A", and then turn the shuttle dial.**

The second digit 1 flashes.

ID1 : A111----

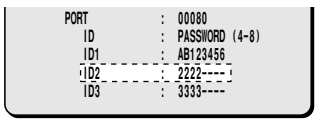
**3 Use the jog dial to display "B", and then turn the shuttle dial.**

The third digit 1 flashes.

ID1 : AB11----

**4 Repeat this procedure to continue entering "123456", and then turn the shuttle dial clockwise.**

The cursor moves to ID2.




**5 As required, use the same procedure to set passwords for ID2 and ID3, and then turn the shuttle dial clockwise.**

The cursor moves to LAN CARD.

**6 Press the EXIT/OSD button.**

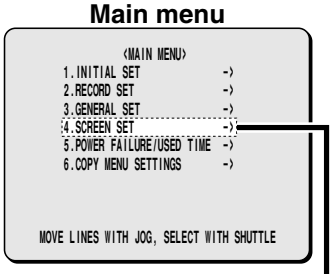
The display returns to the normal screen.

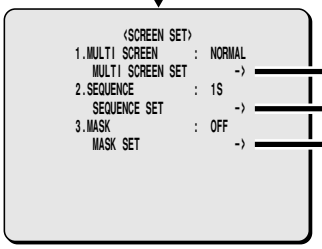
**7 Computer operation**

Refer to the separate Manual for Remote Operation by Network Connection.

# SCREEN SETTING

**Main menu**



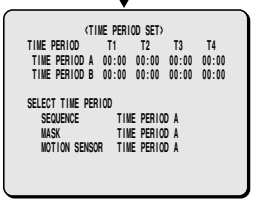

**Using the timer function for automatic switching (See page 84.)**

**When the timer function has been set, you can automatically switch camera images at intervals corresponding to the setting time.**

**Using the timer function for masking the monitor (See page 85.)**

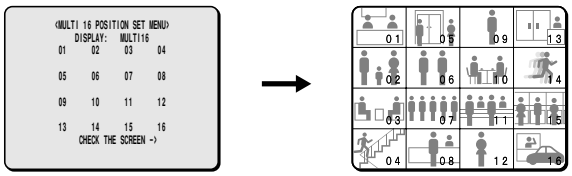
**When the timer function has been set, you can hide the camera images with a gray pattern at intervals corresponding to the setting time.**

**TIMER PERIOD settings (See page 46.)**


〈TIME PERIOD SET〉
TIME PERIOD T1 T2 T3 T4
TIME PERIOD A 00:00 00:00 00:00 00:00
TIME PERIOD B 00:00 00:00 00:00 00:00
SELECT TIME PERIOD
SEQUENCE TIME PERIOD A
MASK TIME PERIOD A
MOTION SENSOR TIME PERIOD A

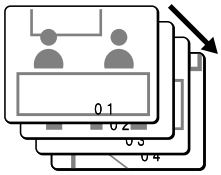
**A Split screen display position setting (See page 81.)**

**You can change the order that the camera images are displayed in.**



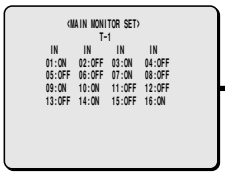

**B Automatic switching time setting (See page 82.)**

**You can switch all camera images after the set time interval.**

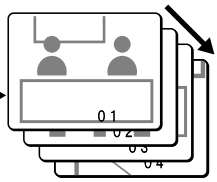



**When set to 5 seconds, automatic switching occurs at 5-second intervals.**

**You can select the camera numbers to be automatically switched, and have them switch after the set time interval.**

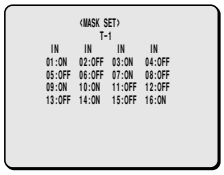



**Select the camera.**

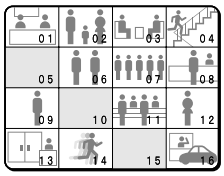



**The selected cameras are switched automatically.**

**C Mask setting (See page 85.)**




**Select the cameras that you do not want to be displayed.**




**The images from the selected cameras are not displayed. Recording is also not possible.**

# SCREEN SETTING

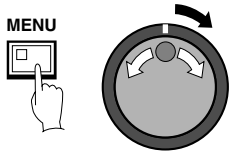
## A MULTI SCREEN setting

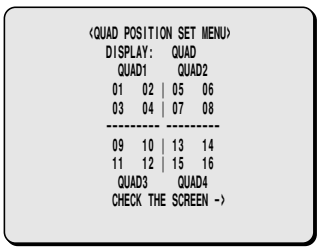
The order in which camera images are displayed in 4-screen, 9-screen and 16-screen displays can be set as desired.

**Note:** The same camera image cannot be displayed more than once on the same screen.

### Example 1: To display camera 1 image on cameras 06, 11, 16 (in a 4-screen display)

The DSR-3009P model can display only cameras 01 to 09.




**1 Press the MENU button to select SCREEN SET, and then turn the shuttle dial clockwise.**

The SCREEN SET sub-menu appears, and the cursor is positioned at MULTI SCREEN.

**2 Turn the shuttle dial clockwise, use the jog dial to change the MULTI SCREEN setting to "CHANGE", and then turn the shuttle dial counterclockwise.**

The cursor moves to MULTI SCREEN SET.

**Display examples:**

- **NORMAL:** The order of camera images is not rearranged.
- **CHANGE:** Select when changing the order of the camera images.

**3 Turn the shuttle dial clockwise.**

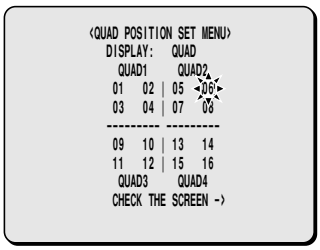
The QUAD POSITION SET sub-menu appears.

**4 Turn the shuttle dial clockwise, use the jog dial to select "QUAD", and then turn the shuttle dial clockwise.**

"**01**" flashes.

**5 Use the jog dial to move the cursor to camera number "06", and then turn the shuttle dial clockwise.**

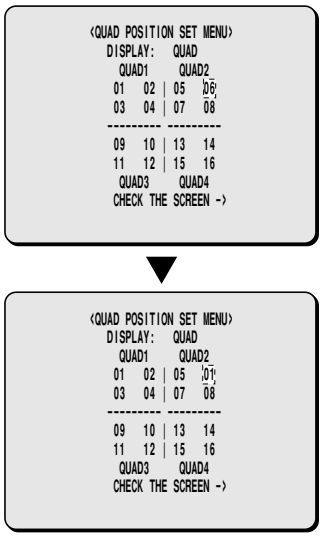
"**06**" flashes.




**Note:** This can also be set using the numeric keys. (See page 43.)

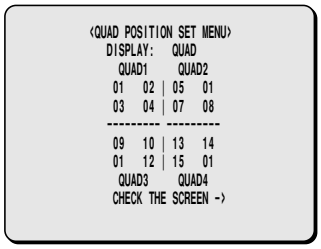
**6 Use the jog dial to set "01", and then turn the shuttle dial clockwise.**

"**06**" changes to "**01**".



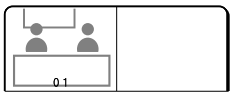

**7 Repeat steps 4 and 5 above to set "11" and "16" to "01".**

"**11**" and "**16**" change to "**01**".

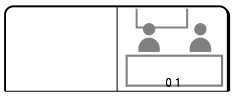



**Note:** If you select CHECK THE SCREEN at the bottom of the screen, you can check the revised layout of the screens.

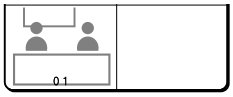
**Display examples:**



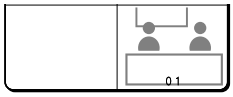

**1 – 4**




**9 – 12**




**5 – 8**



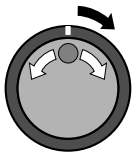

**13 – 16**

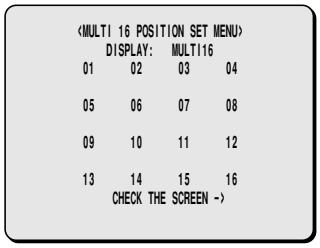
**8 Press the EXIT/OSD button.**

The display returns to the normal screen.

# SCREEN SETTING

### Example 2: To display the image from camera 16 at camera 05 position (in a 16-screen display)






**1** **Use the jog dial to move the cursor to MULTI SCREEN, and then turn the shuttle dial clockwise.**

"**NORMAL**" flashes.

**2** **Use the jog dial to change the MULTI SCREEN setting to "CHANGE", and then turn the shuttle dial clockwise.**

The cursor moves to MULTI SCREEN SET.

**Display examples:**

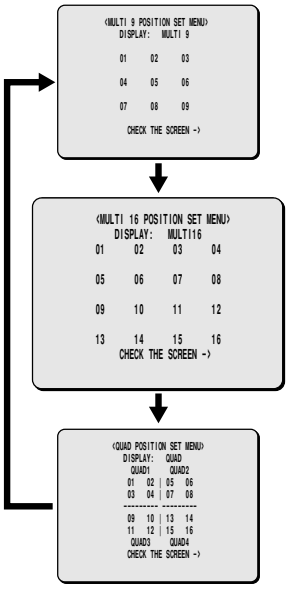
- **NORMAL:** The order of camera images is not rearranged.
- **CHANGE:** Select when changing the order of the camera images.

**3** **Turn the shuttle dial clockwise.**

The QUAD POSITION SET sub-menu appears.

**4** **Turn the shuttle dial clockwise, use the jog dial to display a 16-screen split screen, and then turn the shuttle dial clockwise.**

The screen display changes to a 9-screen, 16-screen and 4-screen split screen in that order. The DSR-3009P model does not display the MULTI 16 POSITION SET menu.

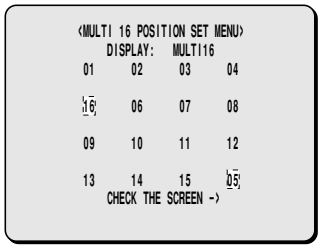



**5** **Use the jog dial to move the cursor to "05", and then turn the shuttle dial clockwise.**

"**05**" flashes.

**6** **Use the jog dial to set "16", and then turn the shuttle dial clockwise.**

"**05**" changes to "**16**" and "**16**" changes to "**05**".



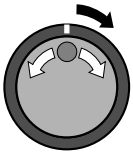

**7** **Press the EXIT/OSD button.**

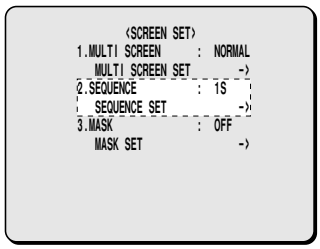
The display returns to the normal screen.

## B SEQUENCE setting

This lets you set the automatic switching time. The switching time setting for automatic switching display is only effective for single-screen and 4-screen displays. Two types of setting can be made: all cameras can be switched at the same time, or the switching times can be set separately for each camera.

### Example 1: To set 5-second intervals for automatic switching display of all main and spot monitor images






**1** **Press the MENU button to select SCREEN SET, and then turn the shuttle dial clockwise.**

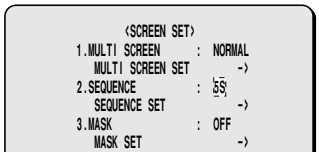
The SCREEN SET sub-menu appears, and the cursor is positioned at MULTI SCREEN.

**2** **Use the jog dial to move the cursor to SEQUENCE, and then turn the shuttle dial clockwise.**

"**1S**" flashes.

**3** **Use the jog dial to set the switching time to "05", and then turn the shuttle dial clockwise.**

Automatic switching display is set to intervals of 5 seconds.




**Display examples:**

- **1 – 30S:** Sets the automatic switching time to the number of seconds selected.
- **INDIV. :** Select when setting individual switching times for each camera.

**4** **Press the EXIT/OSD button.**

The display returns to the normal screen.

**5** **At the normal screen (automatic switching is possible), press the SEQUENCE button.**

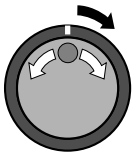
The screen will switch at 5-second intervals. To stop the screen switching, press the **SEQUENCE** button once more.

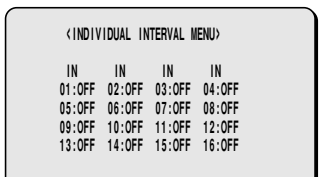
### Example 2: To set the automatic switching period for the main monitor.

For the DSR-3009P model, set cameras from 1 to 9.

- Set cameras 1 to 8 to 2-second automatic switching displays.
- Set cameras 9 to 16 to 3-second automatic switching displays.

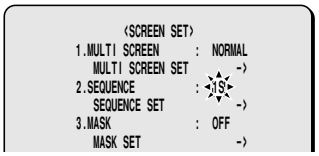
**Note:** The automatic switching time interval for monitor 2 can be set in the same way (individual setting conditions for each camera will be the same as for the main monitor).






**1** **Use the jog dial to move the cursor to SEQUENCE, and then turn the shuttle dial clockwise.**

"**1S**" flashes.

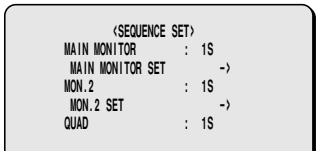



**2** **Use the jog dial to change the SEQUENCE setting to "INDIV.", and then turn the shuttle dial clockwise.**

The cursor moves to SEQUENCE SET.

**3** **Turn the shuttle dial clockwise.**

The SEQUENCE SET sub-menu appears.




**4** **Turn the jog dial to select MAIN MONITOR, and then turn the shuttle dial clockwise.**

"**1S**" flashes.

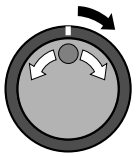
**5** **Use the jog dial to set "INDIV.", and then turn the shuttle dial clockwise.**

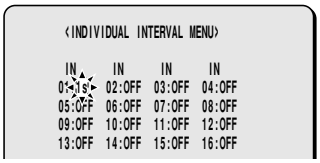
**6** **Use the jog dial to move the cursor to INDIVIDUAL INTERVAL SET, and then turn the shuttle dial clockwise.**

The INDIVIDUAL INTERVAL SET sub-menu appears.

**7** **Use the jog dial to move the cursor to CAMERA 1 (01), and then turn the shuttle dial clockwise.**

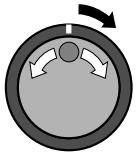
"**1S**" flashes.

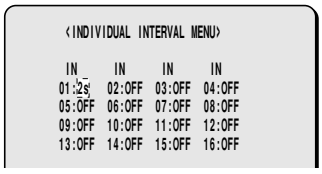


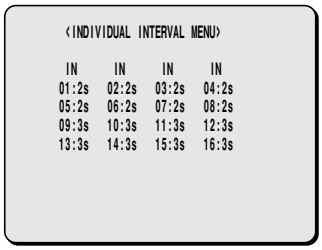



**8** **Use the jog dial to set "2S", and then turn the shuttle dial clockwise.**

Repeat the above procedure to set each item from 02 to 08 to "**2S**", and from 09 to 16 to "**3S**".





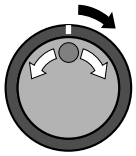



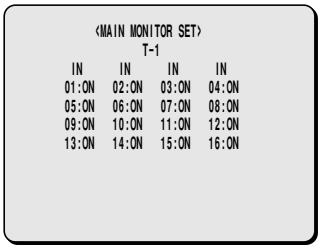

**Note:** When separate switching time intervals are entered for each camera, the screens will switch automatically according to the switching times entered.

**9 Press the EXIT/OSD button.**

The display returns to the normal screen.

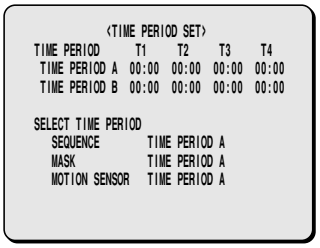
**Example 3: To set a 5-second interval for the automatic switching of main monitor images and to prevent automatic switching from occurring when it is not required, such as when using the timer function.**





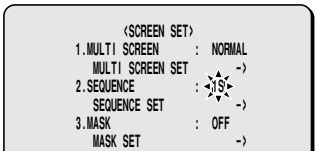

**1 Set the timer setting for both TIMER A and TIMER B in the TIME PERIOD SET menu. (See page 46.)**

Set both TIMER A and TIMER B.


〈TIME PERIOD SET〉
TIME PERIOD T1 T2 T3 T4
TIME PERIOD A 00:00 00:00 00:00 00:00
TIME PERIOD B 00:00 00:00 00:00 00:00
SELECT TIME PERIOD
SEQUENCE TIME PERIOD A
MASK TIME PERIOD A
MOTION SENSOR TIME PERIOD A

**2 Use the jog dial to move the cursor to SEQUENCE, and then turn the shuttle dial clockwise.**

"**1S**" flashes.

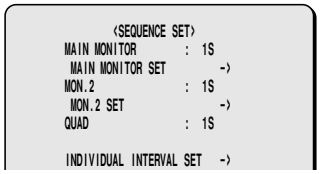



**3 Use the jog dial to change the SEQUENCE setting to "INDIV.", and then turn the shuttle dial clockwise.**

The cursor moves to SEQUENCE SET.

**4 Turn the shuttle dial clockwise.**

The SEQUENCE SET sub-menu appears.




**5 Turn the jog dial to select MAIN MONITOR, and then turn the shuttle dial clockwise.**

"**1S**" flashes.

**6 Use the jog dial to set "5S", and then turn the shuttle dial clockwise.**

The cursor moves to MAIN MONITOR SET.

**Display examples:**

- **1 – 30S:** Sets the automatic switching time for the main monitor.
- **INDIV. :** Select when setting individual switching times for each camera for the main monitor.

**7 Turn the shuttle dial clockwise.**

The MAIN MONITOR SET sub-menu will be displayed. This sub-menu screen is used to select whether the images from cameras 1 to 16 are displayed or not displayed for the time set by the timer setting (T-1).

**8 Turn the shuttle dial clockwise, use the jog dial to select "T-1", and then turn the shuttle dial clockwise.**

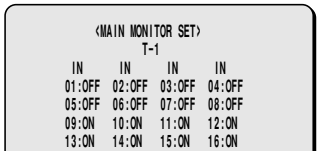
The cursor moves to 01.

**9 Use the jog dial to move the cursor to CAMERA 1 (01), and then turn the shuttle dial clockwise.**

"**ON**" flashes.

**10 Use the jog dial to set "OFF", and then turn the shuttle dial clockwise.**

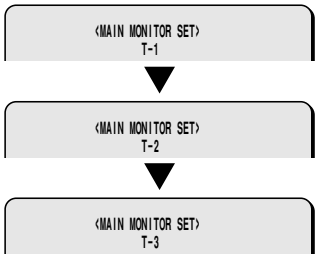
Repeat the above procedure to set cameras 2 (02) through to 8 (08) to "**OFF**".




**11 Use the jog dial to move the cursor to T-1, and then turn the shuttle dial clockwise.**

**12** **Use the jog dial to set T-2, and then turn the shuttle dial clockwise.**

Repeat this procedure to switch between T-1, T-2, T-3 and T-4.

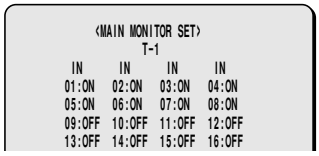



**13** **Use the jog dial to move the cursor to 09, and then turn the shuttle dial clockwise.**

"**ON**" flashes.

**14** **Use the jog dial to set "OFF", and then turn the shuttle dial clockwise.**

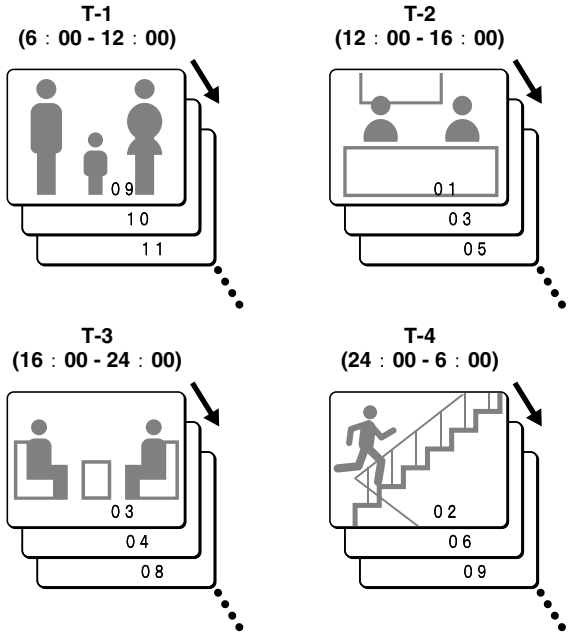
Repeat the above procedure to set cameras 10 (10) through to 16 (16) to "**OFF**".




**Note:** Repeat steps 10 to 12 to set T-3 and T-4 as required.

**15** **Press the EXIT/OSD button.**

The display returns to the normal screen.




**Note:**

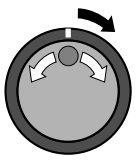
- Repeat the above procedure to make the settings for monitor 2.
- For a 4-screen display, the timer function cannot be used for automatic switching of screen images.

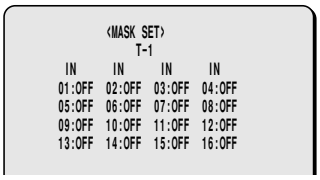
## C MASK settings

If you do not need camera images to be displayed on the monitor screen, you can hide the images for individual cameras with a gray pattern.

The DSR-3009P model can display only cameras 01 to 09.

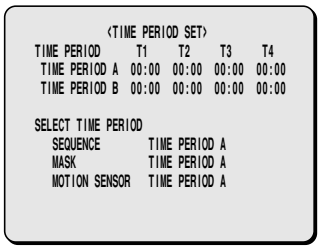
### Example 1: To prevent certain camera images from being monitored for the period of time set by the timer (TIMER A, B)





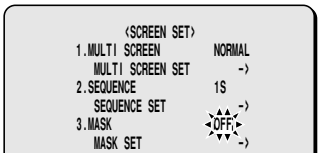

**1** **Set the timer setting for both TIMER A and TIMER B in the TIME PERIOD SET menu. (See page 46.)**

Set both TIMER A and TIMER B.


‹TIME PERIOD SET›
TIME PERIOD T1 T2 T3 T4
TIME PERIOD A 00:00 00:00 00:00 00:00
TIME PERIOD B 00:00 00:00 00:00 00:00
SELECT TIME PERIOD
SEQUENCE TIME PERIOD A
MASK TIME PERIOD A
MOTION SENSOR TIME PERIOD A

**2** **Use the jog dial to move the cursor to MASK, and then turn the shuttle dial clockwise.**

"**OFF**" flashes.




**3** **Use the jog dial to set "ON", and then turn the shuttle dial clockwise.**

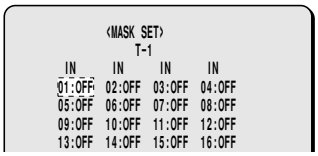
The cursor moves to MASK SET.

**4** **Turn the shuttle dial clockwise.**

The MASK SET sub-menu will be displayed, and the cursor will be at the T-1 setting. This sub-menu screen is used to select whether the images from cameras 1 to 16 are masked or not masked for the time set by the timer setting (T-1).

**5** **Turn the jog dial to select "T-1", and then turn the shuttle dial clockwise.**

The cursor moves to 01.

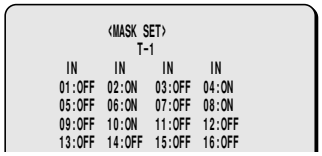



**6** **Use the jog dial to move the cursor to 02, and then turn the shuttle dial clockwise.**

"**OFF**" flashes.

**7** **Use the jog dial to set "ON", and then turn the shuttle dial clockwise.**

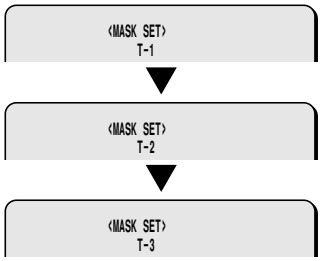
Repeat the above procedure to set cameras 4 (04), 6 (06), 8 (08) and 10 (10) to "**ON**".




**8** **Use the jog dial to move the cursor to T-1, and then turn the shuttle dial clockwise.**

**9** **Use the jog dial to set T-2, and then turn the shuttle dial clockwise.**

Repeat this procedure to switch between T-1, T-2, T-3 and T-4.

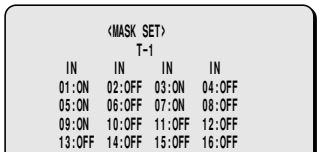



**10** **Use the jog dial to move the cursor to 01, and then turn the shuttle dial clockwise.**

"**OFF**" flashes.

**11** **Use the jog dial to set "ON", and then turn the shuttle dial clockwise.**

Repeat the above procedure to set cameras 3 (03), 5 (05), 7 (07) and 9 (09) to "**ON**".

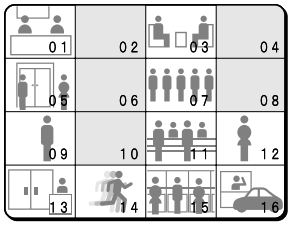



**Note:** Repeat steps 10 to 12 to set T-3 and T-4 as required.

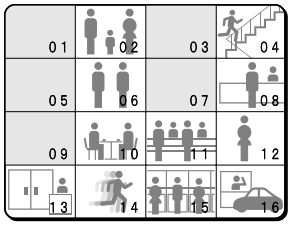
**12** **Press the EXIT/OSD button.**

The display will return to the normal screen. When the period of time set by the timer has been reached, the camera images that have been selected will be hidden by a gray pattern.

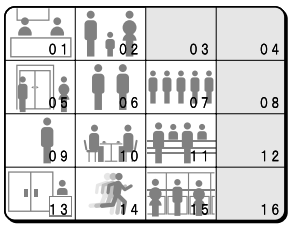
**Example of mask display when timer is set**



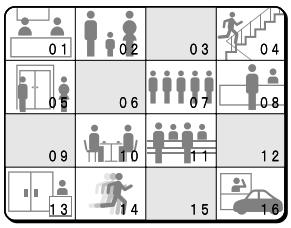
**T-1 (6:00 - 12:00)**



**T-2 (12:00 - 16:00)**

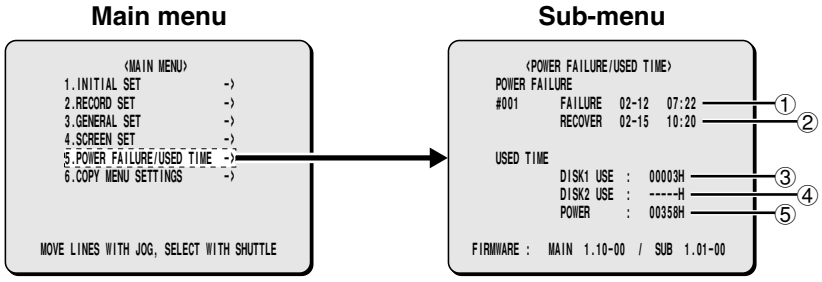


**T-3 (16:00 - 24:00)**



**T-4 (24:00 - 6:00)**

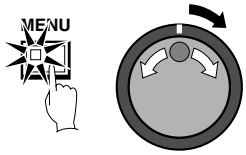
# POWER FAILURE/USED TIME DISPLAY




**1 Press the MENU button to select POWER FAILURE/USED TIME, and then turn the shuttle dial clockwise.**

The POWER FAILURE/USED TIME sub-menu appears.

Check details such as the date and time of the power failure and the usage time for the hard disk.







**2 Press the EXIT/OSD button.**

The display returns to the normal screen.

### About the sub-menu

① **FAILURE**

Shows the date/time when a power failure occurred.

The number of power failures appears at the left. (example: #020) When the number exceeds 999 it returns to 000.

② **RECOVER**

Shows the date/time when power was restored.

③ **DISK1 USE**

Shows the total hard disk 1 usage time.

④ **DISK2 USE**

Shows the total hard disk 2 usage time (when a hard disk has been added).

⑤ **POWER**

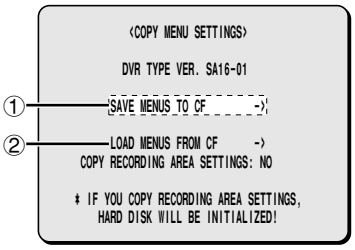
Shows the total usage time for this unit.

# SAVING MENU SETTING DETAILS

The details of menu settings can be saved (copied) onto a CompactFlash card, and settings which have been saved onto a CompactFlash card can be retrieved (loaded) into the digital video recorder. This function can be used to make the same settings easily or several digital video recorders.

**1 Press the MENU button to select COPY MENU SETTINGS, and then turn the shuttle dial clockwise.**

The COPY MENU SETTINGS sub-menu appears.


〈COPY MENU SETTINGS〉
DVR TYPE VER. SA16-01
①
SAVE MENUS TO CF ->
②
LOAD MENUS FROM CF ->
COPY RECORDING AREA SETTINGS: NO
* IF YOU COPY RECORDING AREA SETTINGS,
HARD DISK WILL BE INITIALIZED!

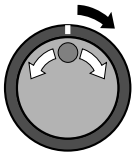
① **Save menu settings onto a CompactFlash card**

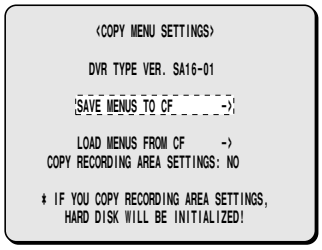
This saves menu setting details onto a CompactFlash card.

② **Load menu settings from CompactFlash card**

This loads menu settings from a CompactFlash card into the digital video recorder.

## ■Saving to a CompactFlash card



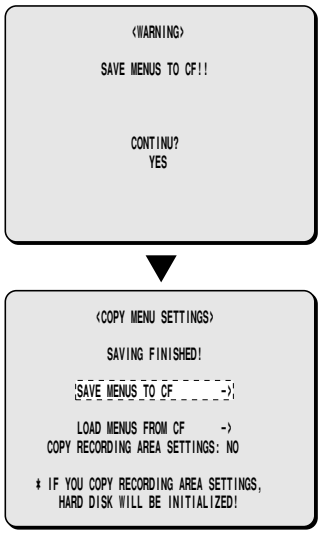

〈COPY MENU SETTINGS〉
DVR TYPE VER. SA16-01
SAVE MENUS TO CF ->
LOAD MENUS FROM CF ->
COPY RECORDING AREA SETTINGS: NO
* IF YOU COPY RECORDING AREA SETTINGS,
HARD DISK WILL BE INITIALIZED!

**1 Turn the jog dial to select SAVE MENUS TO CF, and then turn the shuttle dial clockwise.**

The WARNING screen will appear to let you confirm the saving.

**2 To save the settings, use the jog dial to display "YES", and then turn the shuttle dial clockwise.**

Saving will then start. When saving is complete, SAVING FINISHED ! will be displayed. A file called MENUCOPY.TXT will be created in the CompactFlash card directory.

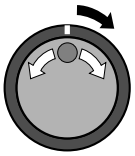


# SAVING MENU SETTING DETAILS

## ■Loading saved menu settings

This procedure loads menu setting details that have been saved onto a CompactFlash card into the digital video recorder.

**Note:** When loading the settings into the digital video recorder, you can select whether to load recording area settings also.
If you read different menu settings into a digital video recorder which already has images recorded onto its hard disk, the recording areas will be automatically initialized, and all images that have already been recorded will be lost. Therefore, you should normally select "**NO**" for the COPY RECORDING AREA SETTINGS item. If you select "**YES**" and then load the menu settings, it will cause the hard disk initialization to start, and so the administrator's password entry screen will appear.



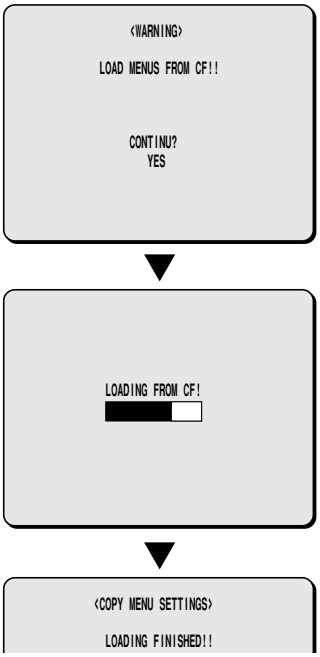
〈COPY MENU SETTINGS〉
DVR TYPE VER. SA16-01
SAVE MENUS TO CF ->
LOAD MENUS FROM CF ->
COPY RECORDING AREA SETTINGS: NO
* IF YOU COPY RECORDING AREA SETTINGS,
HARD DISK WILL BE INITIALIZED!

**1 Turn the jog dial to select LOAD MENUS FROM CF, and then turn the shuttle dial clockwise.**

The WARNING screen will appear to let you confirm the loading.

**2 To load the settings, use the jog dial to display "YES", and then turn the shuttle dial clockwise.**

Loading will then start. When saving is complete, LOADING FINISHED!! will be displayed.

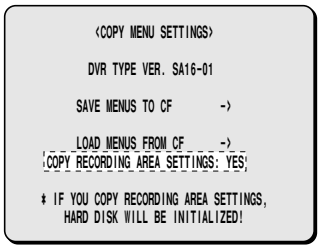



### ☞ If copying the recording area settings

This describes how to copy the recording area settings.

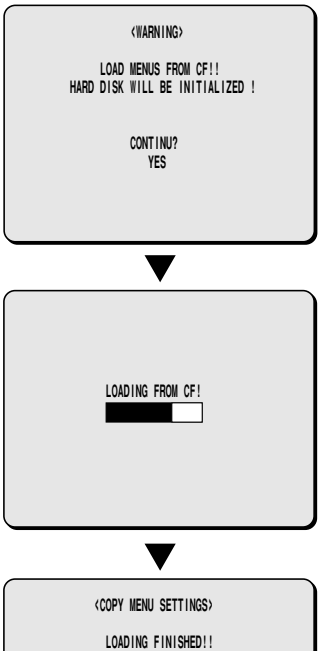
Normally you should set COPY RECORDING AREA SETTINGS to "**NO**".

**1 To copy the settings, use the jog dial to set COPY RECORDING AREA SETTINGS to "YES" and turn the jog dial to select "LOAD MENUS FROM CF", and then turn the shuttle dial clockwise.**


〈COPY MENU SETTINGS〉
DVR TYPE VER. SA16-01
SAVE MENUS TO CF ->
LOAD MENUS FROM CF ->
COPY RECORDING AREA SETTINGS: YES
* IF YOU COPY RECORDING AREA SETTINGS,
HARD DISK WILL BE INITIALIZED!

**2 To copy the settings, use the jog dial to select "YES" in the WARNING screen, and then turn the shuttle dial clockwise.**

Copying will then start. When copying is complete, LOADING FINISHED!! will be displayed.



# PROGRAM REC RECORDING RATE

- **Without PRE ALARM**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25.000 | 12.500 | 8.333 | 6.250 | 5.000 | 4.167 | 3.571 | 3.125 | 2.778 | 2.500 | 2.273 | 2.083 | 1.923 | 1.786 | 1.667 | 1.563 |
| 12.500 | 6.250 | 4.167 | 3.125 | 2.500 | 2.083 | 1.786 | 1.563 | 1.389 | 1.250 | 1.136 | 1.042 | 0.962 | 0.893 | 0.833 | 0.781 |
| 8.333 | 4.167 | 2.778 | 2.083 | 1.667 | 1.389 | 1.190 | 1.042 | 0.926 | 0.833 | 0.758 | 0.694 | 0.641 | 0.595 | 0.556 | 0.521 |
| 6.250 | 3.125 | 2.083 | 1.563 | 1.250 | 1.042 | 0.893 | 0.781 | 0.694 | 0.625 | 0.568 | 0.521 | 0.481 | 0.446 | 0.417 | 0.391 |
| 5.000 | 2.500 | 1.667 | 1.250 | 1.000 | 0.833 | 0.714 | 0.625 | 0.556 | 0.500 | 0.455 | 0.417 | 0.385 | 0.357 | 0.333 | 0.313 |
| 4.167 | 2.083 | 1.389 | 1.042 | 0.833 | 0.694 | 0.595 | 0.521 | 0.463 | 0.417 | 0.379 | 0.347 | 0.321 | 0.298 | 0.278 | 0.260 |
| 3.571 | 1.786 | 1.190 | 0.893 | 0.714 | 0.595 | 0.510 | 0.446 | 0.397 | 0.357 | 0.325 | 0.298 | 0.275 | 0.255 | 0.238 | 0.223 |
| 3.125 | 1.563 | 1.042 | 0.781 | 0.625 | 0.521 | 0.446 | 0.391 | 0.347 | 0.313 | 0.284 | 0.260 | 0.240 | 0.223 | 0.208 | 0.195 |
| 2.778 | 1.389 | 0.926 | 0.694 | 0.556 | 0.463 | 0.397 | 0.347 | 0.309 | 0.278 | 0.253 | 0.231 | 0.214 | 0.198 | 0.185 | 0.174 |
| 2.500 | 1.250 | 0.833 | 0.625 | 0.500 | 0.417 | 0.357 | 0.313 | 0.278 | 0.250 | 0.227 | 0.208 | 0.192 | 0.179 | 0.167 | 0.156 |
| 2.273 | 1.136 | 0.758 | 0.568 | 0.455 | 0.379 | 0.325 | 0.284 | 0.253 | 0.227 | 0.207 | 0.189 | 0.175 | 0.162 | 0.152 | 0.142 |
| 2.083 | 1.042 | 0.694 | 0.521 | 0.417 | 0.347 | 0.298 | 0.260 | 0.231 | 0.208 | 0.189 | 0.174 | 0.160 | 0.149 | 0.139 | 0.130 |
| 1.786 | 0.893 | 0.595 | 0.446 | 0.357 | 0.298 | 0.255 | 0.223 | 0.198 | 0.179 | 0.162 | 0.149 | 0.137 | 0.128 | 0.119 | 0.112 |
| 1.563 | 0.781 | 0.521 | 0.391 | 0.313 | 0.260 | 0.223 | 0.195 | 0.174 | 0.156 | 0.142 | 0.130 | 0.120 | 0.112 | 0.104 | 0.098 |
| 1.389 | 0.694 | 0.463 | 0.347 | 0.278 | 0.231 | 0.198 | 0.174 | 0.154 | 0.139 | 0.126 | 0.116 | 0.107 | 0.099 | 0.093 | 0.087 |
| 1.250 | 0.625 | 0.417 | 0.313 | 0.250 | 0.208 | 0.179 | 0.156 | 0.139 | 0.125 | 0.114 | 0.104 | 0.096 | 0.089 | 0.083 | 0.078 |
| 1.136 | 0.568 | 0.379 | 0.284 | 0.227 | 0.189 | 0.162 | 0.142 | 0.126 | 0.114 | 0.103 | 0.095 | 0.087 | 0.081 | 0.076 | 0.071 |
| 1.042 | 0.521 | 0.347 | 0.260 | 0.208 | 0.174 | 0.149 | 0.130 | 0.116 | 0.104 | 0.095 | 0.087 | 0.080 | 0.074 | 0.069 | 0.065 |
| 0.962 | 0.481 | 0.321 | 0.240 | 0.192 | 0.160 | 0.137 | 0.120 | 0.107 | 0.096 | 0.087 | 0.080 | 0.074 | 0.069 | 0.064 | 0.060 |

(Unit: FPS)

- **With PRE ALARM**

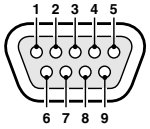
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12.500 | 6.250 | 4.167 | 3.125 | 2.500 | 2.083 | 1.786 | 1.563 | 1.389 | 1.250 | 1.136 | 1.042 | 0.962 | 0.893 | 0.833 | 0.781 |
| 6.250 | 3.125 | 2.083 | 1.563 | 1.250 | 1.042 | 0.893 | 0.781 | 0.694 | 0.625 | 0.568 | 0.521 | 0.481 | 0.446 | 0.417 | 0.391 |
| 4.167 | 2.083 | 1.389 | 1.042 | 0.833 | 0.694 | 0.595 | 0.521 | 0.463 | 0.417 | 0.379 | 0.347 | 0.321 | 0.298 | 0.278 | 0.260 |
| 3.125 | 1.563 | 1.042 | 0.781 | 0.625 | 0.521 | 0.446 | 0.391 | 0.347 | 0.313 | 0.284 | 0.260 | 0.240 | 0.223 | 0.208 | 0.195 |
| 2.500 | 1.250 | 0.833 | 0.625 | 0.500 | 0.417 | 0.357 | 0.313 | 0.278 | 0.250 | 0.227 | 0.208 | 0.192 | 0.179 | 0.167 | 0.156 |
| 2.083 | 1.042 | 0.694 | 0.521 | 0.417 | 0.347 | 0.298 | 0.260 | 0.231 | 0.208 | 0.189 | 0.174 | 0.160 | 0.149 | 0.139 | 0.130 |
| 1.786 | 0.893 | 0.595 | 0.446 | 0.357 | 0.298 | 0.255 | 0.223 | 0.198 | 0.179 | 0.162 | 0.149 | 0.137 | 0.128 | 0.119 | 0.112 |
| 1.563 | 0.781 | 0.521 | 0.391 | 0.313 | 0.260 | 0.223 | 0.195 | 0.174 | 0.156 | 0.142 | 0.130 | 0.120 | 0.112 | 0.104 | 0.098 |
| 1.389 | 0.694 | 0.463 | 0.347 | 0.278 | 0.231 | 0.198 | 0.174 | 0.154 | 0.139 | 0.126 | 0.116 | 0.107 | 0.099 | 0.093 | 0.087 |
| 1.250 | 0.625 | 0.417 | 0.313 | 0.250 | 0.208 | 0.179 | 0.156 | 0.139 | 0.125 | 0.114 | 0.104 | 0.096 | 0.089 | 0.083 | 0.078 |
| 1.136 | 0.568 | 0.379 | 0.284 | 0.227 | 0.189 | 0.162 | 0.142 | 0.126 | 0.114 | 0.103 | 0.095 | 0.087 | 0.081 | 0.076 | 0.071 |
| 1.042 | 0.521 | 0.347 | 0.260 | 0.208 | 0.174 | 0.149 | 0.130 | 0.116 | 0.104 | 0.095 | 0.087 | 0.080 | 0.074 | 0.069 | 0.065 |
| 0.962 | 0.481 | 0.321 | 0.240 | 0.192 | 0.160 | 0.137 | 0.120 | 0.107 | 0.096 | 0.087 | 0.080 | 0.074 | 0.069 | 0.064 | 0.060 |

(Unit: FPS)

# INTERFACE SPECIFICATIONS

## RS-232C

**9-pin connector specifications**




| Pin No. | Signal | Operation | Signal direction |
|---|---|---|---|
| 1 | – | – | – |
| 2 | RXD | Receive data | Computer → Digital video recorder |
| 3 | TXD | Transmit data | Digital video recorder → Computer |
| 4 | – | – | – |
| 5 | GND | Ground | – |
| 6 | – | – | – |
| 7 | RTS | Request to send | Digital video recorder → Computer |
| 8 | – | – | – |
| 9 | – | – | – |

### Data format

| | |
|---|---|
| **Mode** | Asynchronous |
| **Character length** | 8 bits |
| **Data transmit speed** | 2400, 4800, 9600, 19200 bps |
| **Parity** | None |
| **Stop bit** | 1 |

### Communication protocol

Communication is carried out in units of 1 byte. After the computer transmits one byte of data, it waits for a response from the digital video recorder, and then transmits the next byte of data.

To start sending commands, an **ON (F6)** command is sent. The digital video recorder will continue to receive commands until an **OFF (F7)** command is sent to stop. The digital video recorder sends an **ACK (OA)** each time it receives a command.

See **Command Table** on page 92.

## RS-485

### Data format

| | |
|---|---|
| **Mode** | Asynchronous |
| **Character length** | 8 bits |
| **Data transmit speed** | 2400, 4800, 9600, 19200 bps |
| **Parity** | None |
| **Stop bit** | 1 |

### Communication protocol

A proprietary Sanyo protocol (SSP: Security Serial Protocol) is used. It is recommended that a special controller be used. Contact the place of purchase for further details on obtaining a special controller.

## RS485 termination switch settings (RS485 TERMINATE)

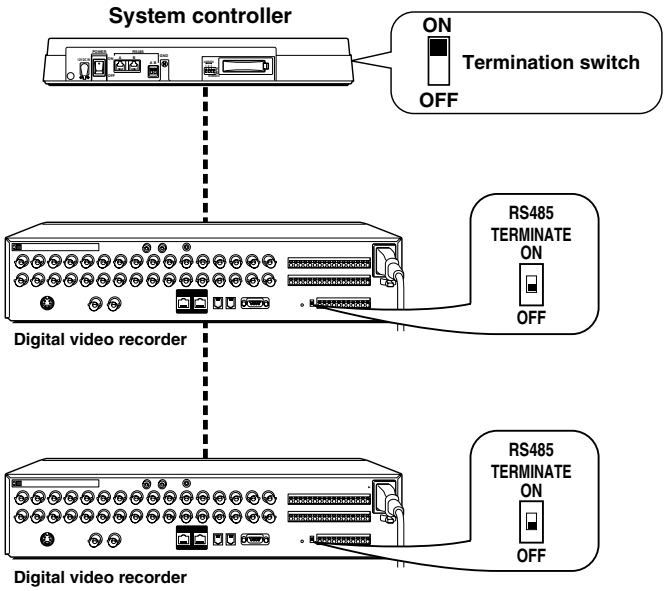
### Termination setting

If several unit are being connected together, termination settings must also be made.

- Set the RS485 termination switch on the rear panel to **ON**, and set the termination switch of the last device in the series to **ON**.
- Be sure to set the RS485 termination switches of all devices in between (devices other than the first and last in the series) to **OFF**.

**Note:** If the termination settings are not correct, data will be reflected by either end of the series and this will affect the transmission of other data, so that the data that is transmitted to each device will not be correct.

**(Example)**



# INTERFACE SPECIFICATIONS

## Command Table

The following table shows all of the commands that can be processed by the digital video recorder.
If a command sent does not correspond to a digital video recorder function, the command is received but no operation is carried out.

| Upper bit / Lower bit | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| 0 | | | | | | | TIMER ON/OFF | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | SHIFT← | SHIFT→ | |
| 4 | | | | | | SHIFT↑ | SHIFT↓ | MENU |
| 5 | | | | | | | SHIFT+ /RP UP | |
| 6 | | | | | | | SHIFT– /RP DOWN | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | SECURITY LOCK ON | |
| A | ACK | | | PLAY | REV PLAY/ SEARCH (DVR) | | | |
| B | NAK | | | | | | | |
| C | | | | | | | GROUP SET | |
| D | | | | | | | GROUP CHECK | |
| E | | | | | | | GROUP CLEAR | |
| F | | | | STOP | STILL | | | |

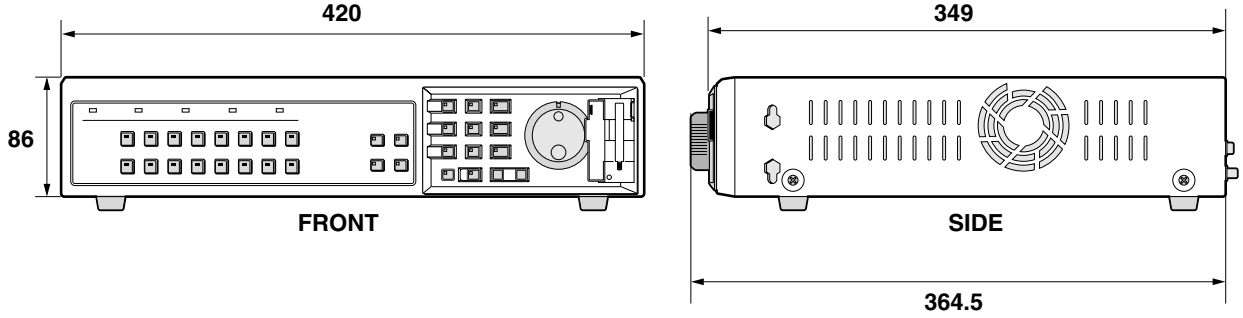
| Upper bit / Lower bit | 8 | 9 | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| 0 | | | | | | | CLOCK ADJUST | |
| 1 | | | | | | | MENU RESET | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
| 5 | ZOOM (MPX) | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | STATUS SENSE | | |
| 8 | | | | | | MENU UPLOAD | MENU DOWNLOAD | |
| 9 | | | | | | | CLOCK DOWNLOAD | |
| A | | | | | REC | | | REC/DUB REQUEST |
| B | | | FF/ALARM F | | | | | |
| C | CHANNEL | | REW/ ALARM R | | | | | |
| D | COPY | | | | | | | *RS-485 SEND START |
| E | OSD/EXIT | | | STATUS LOG2 | | | | *RS-485 RCV CMF. |
| F | | | | STATUS LOG1 | REC STOP | | | |

: Command for RS-485 only.

# SPECIFICATIONS

| | | |
|---|---|---|
| **Hard disk capacity** | : | 80 GB or 160 GB |
| **Television System** | : | Based on PAL colour signal standard |
| **Picture Resolution** | : | 720 x 288 (Field) |
| **Compression** | : | M-JPEG |
| **Picture Quality** | : | 5 Levels (Basic, Normal, Enhanced, Fine, Super Fine) |
| **Recording Type** | : | Field Recording |
| **Recording Speed** | : | 27 Levels. |
| **Recording Area** | : | Normal Recording Area, Alarm Recording Area, Archive Area |
| **Playback** | : | Playback, Still, Search |
| **Zoom** | : | 2 Times Zoom Function |
| **Search Mode** | | |
| • **Time/Date Search** | : | Search by time and date |
| • **Alarm Search** | : | Search by alarm event list |
| • **Alarm Thumbnail Search** | : | Search by alarm event thumbnails |
| • **Archive Area Search** | : | Search Archive Area with event list |
| • **Smart Motion Search** | : | Search by specifying a motion sensor |
| **Menu Language** | : | English/French/German/Spanish |
| **Clock settings** | : | Year/month/day/hours/minutes/seconds |
| **Video input terminal** | : | 1.0 Vp-p/75 Ω, unbalanced, BNC x 16 (DSR-3016P), x 9 (DSR-3009P) |
| **S-Video input terminal** | : | Separate YC signals, DIN connector x 1 |
| **Digital input terminal** | : | RJ-45 x1 |
| **Audio input terminal** | : | –8dBs, 27 kΩ unbalanced (RCA pin jack) |
| **Microphone input terminal** | : | –60dBs 10 kΩ unbalanced, 3.5mm mini jack |
| **Video output terminal** | : | 1.0 Vp-p/75 Ω, unbalanced, BNC x 16 (DSR-3016P), x9 (DSR-3009P) |
| **S-Video output terminal** | : | Separate YC signals, DIN connector x 1 |
| **Digital output terminal** | : | RJ-45 x1 |
| **Audio output terminal** | : | –8dBs, 600 Ω unbalanced (RCA pin jack) |
| **Compact Flash Slot** | : | Compact Flash Type 2 (Front) |
| **PC Card Slot** | : | PCMCIA Type 2 (Rear) for SCSI or Ethernet card |
| **RS-232C terminal** | : | D- SUB 9pin (for PC) |
| **Control connectors** | | |
| • **RS-485 terminal** | : | DJ-11 (3 terminals: A, B, C (GND)) |
| • **Remote control input terminal** | : | External switch connection x 2 |
| • **Alarm input terminal** | : | Normal Open Low level active x 16 (DSR-3016P), x9 (DSR-3009P) |
| • **Alarm output terminal** | : | Normal 0 V High (12 V) level active x 16 (DSR-3016P), x9 (DSR-3009P) |
| • **Alarm reset input terminal** | : | Normal Open Low level active |
| • **NON Rec output terminal** | : | Normal 0 V High (12 V) level active |
| • **Clock adjust output terminal** | : | Normal 5 V Low level active |
| • **Warning output terminal** | : | Normal 0 V High (12 V) level active |
| • **Disk full output terminal** | : | Normal 0 V High (12 V) level active |
| • **Alarm full warning terminal** | : | Normal 0 V High (12 V) level active |
| **Power** | : | AC 220 – 240 V, 50 Hz |
| **Power consumption** | : | DSR-3016P: 38 W 350 mA<br>DSR-3009P: 37 W 340 mA |
| **Operating environment** | : | Temperature: 5°C to 40°C, Humidity: 10 to 80% |
| **Dimensions** | : | 420 (W) x 86 (H) x 364.5 (D) mm |
| **Weight** | : | DSR-3016P: Approx. 6.3 kg<br>DSR-3009P: Approx. 6.2 kg |

## ■ Dimensions: mm

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